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ORIGINAL ARTICLES.

THE TREATMENT OF BRONCHITIS IN CHILDREN.

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THE treatment of bronchitis in children necessitates intimate acquaintance with the structure of the bronchial wall, and with every alteration in this structure at each step and every hour of the morbid process.

These walls unite unique anatomical constituents, each and every one of which influence the symptoms and the treatment of bronchial inflammation, and should, therefore, be present in the mind of every practical physician.

From *without* inward, a bronchus is composed of an *external* fibrous coat of dense fibrilated connective tissue with imbedded cartilages. The cartilages are for keeping the tubes open under varying conditions of respiratory pressure. Without this framework the tubes would collapse with inspiration. A middle coat of transverse muscular fibers, which at their ends are inserted by a ligamentous attachment into the inner surfaces of the cartilages, a short distance from their tips, and into the external fibrous coat. These transverse muscles dilate the bronchus with inspiration. An internal mucous coat, known as the mucosa.

The mucosa is composed of three coats: From *within* outwards, an epithelial layer; a clear homogeneous basement membrane, giving attachment to the epithelium; an *inner* fibrous coat of longitudinal elastic fibers, containing a very copious and an exceedingly fine network of blood vessels, likewise longitudinal. This is also known as the vascular coat. The interposition of a perfectly homogeneous basement membrane between the epithelium and the loose longitudinal network of vessels is of great practical value in bronchitis. This clear, homogeneous layer is most aptly designated a limiting or boundary membrane, owing to its intervention between those layers in which the primary, all-determining changes of bronchitis take place, *i.e.*, congestion, desquamation of epithelium.

Superimposed in all these structures are numerous mucous glands.

In no organ of the body is such a complex variety of structural elements involved in an inflammation as in bronchitis.

STRUCTURE OF SMALL TUBES.

Bronchi, 1-24 of an inch or less in diameter, are so different in composition from those above this size that when they are the seat of inflammation the type of symptoms announce their implication. They are destitute of cartilaginous framework and of ciliated epithelium. They contain no mucous glands. The basement or limiting membrane diminishes *pari passu* with that of the bronchi, and is imperceptible in their smallest ramifications—of gravest import in congestion. These tubes receive instead of giving support. They have a peculiar zigzag course—this is most unfortunate with increased secretions.

FINAL ENDING OF DIFFERENT COATS.

The *external* fibrous coat becomes the peri-lobular capsule, the inter-lobular tissue, and is continuous with the sub-pleural tissue. The unity of the outer wall of the bronchus, and the peri-lobular and sub-pleural structures, in conjunction with their common source of arterial supply, have pathological bearings of the very highest importance. The *inner* fibrous elastic coat becomes the alveolar wall.

VASCULARIZATION OF BRONCHI.

The bronchial arteries form two plexuses in the bronchial wall. An outer *transverse* plexus in the muscular layer for supplying the muscular coat, and the external fibrous coat, the peri-lobular capsule, the inter-lobular tissue, the pleura the bronchial glands and the nervous ganglia.

An inner *longitudinal*, richer plexus, in the *inner* fibrous coat, *for supplying the mucous membrane exclusively.* The capillaries of this plexus, to the bronchi of the fourth division, empty into the pulmonary veins, and are, therefore, in direct comunication with the left heart. These veins have no valves. *Injection of them produces injection of the bronchial capillaries* before the pulmonary arteries—of serious concern in bronchitis with mitral lesion.

AERATION OF BLOOD IN BRONCHIAL CAPILLARIES.

As the bronchial capillaries are exceedingly small, and as a stream of air is constantly passing over them, *when the tubes are clear*, the blood is probably aerated before mingling with the arterialized blood of the pulmonary veins.

There are still further anatomical factors equally essential to a basis for competent physiological treatment.

The pulmonary vessels hang in the bronchial tree, and exceed in size the tubes which support them—notably so among those tubes which are destitute of protective framework. To the large tube the accompanying pulmonary *artery* is loosely attached, while it clings tightly to the defenceless small tube.

The area of the pulmonary capillaries is less than the area of the systemic capillaries. The amount of blood passing through these vessels at each cardiac contraction is exactly equal to the

amount propelled into the systemic circulation. As these vessels lean upon the small bronchi for lateral support, increased pressure in the pulmonary vessels in a young child endangers the integrity of the lumen of the bronchi—every pulmonary congestion in an infant presages evil.

In children up to the fourth or fifth year there is a tendency to rapid and dangerous extension of every bronchial catarrh to the smaller bronchi.

This is explained by the anatomical peculiarities at this period. In young children the longitudinal elastic tissue of the fibro-vascular coat is abundant and loose, and offers slight restraint when pressure in the loosely held *longitudinal* vessels is increased by inflammation.

After the fifth year these structures rapidly assume the adult type, the connective tissue becoming dense and binding, restraining the vessels as in the adult.

What could be more intricate, what more fraught with perplexity and dismay than bronchitis of the small tubes?

Inadvertent, inattentive treatment invite inevitable disaster, while expert physiological management affords results both felicitous and gratifying.

ALTERATIONS IN THE BRONCHIAL WALL IN ACUTE BRONCHITIS.

Prognosis, and enlightened recourse to therapeutic measures, are based upon and determined by the alterations in the *inner* vascular plexus, at the inception and during the progress of bronchitis.

The inception of bronchitis is *distention of the loose longitudinal plexus in the inner fibrous coat,* immediately beneath the basement membrane. The distended vessels push the basement membrane before them and appear as villous-like prominences on the surface. The basement membrane becomes edematous and is thrown into folds. Sometimes the vessels burst and small hemorrhages occur into the mucous membrane. Other vessels are so engorged as to appear like small cavities filled with blood-corpuscles.

The rapidity with which other changes succeed this primary alteration is variable. In ordinary cases the epithelium desquamates in twenty-four hours; in severe inflammations as from influenza and the exanthemata, in four to six hours. The cilia are first thrown off. At this stage there is little or no secretion of mucus, merely redness and tumefaction.

Uncontrolled distention of the vessels, however, is quickly followed by exudation and by increased secretion from the mucous glands. Large quantities of mucus are generated from the epithelial cells alone, while at the same time it wells out from the ducts of the mucous glands—the tubes are rapidly inundated.

Prompt physiological intervention must be resorted to at inception to intercept those further secondary changes which incite complications and fatal terminations.

If not restrained, the inflammation soon extends into the minute bronchi. This is heralded by recession of the lower ribs with inspiration. Blocked tubes, receding chest walls, and weak inspiratory muscles superinduce alveolar collapse as an epiphenomenon.

To obviate fatal issue, extension to the small tubes must be forestalled.

In children under two years bronchitis is one of the most fatal diseases of childhood. Out of 1,000 deaths from this disease, 419 were in children under two, and 490 were under five years of age; nearly all of the remainder (457) were in adults over fifty-five years of age.[1]

An especially fatal form of this disease is that which comes soon after birth, as a result of imprudence in bathing, from low temperature of the room, or from exposing the child to the open air.

There are two types: One is sudden in accession, rapid in course, involving the *inner* plexus. Active physiological counteraction must be instituted at once, or the issue is fatal in a few days.

The other is characterized by insidiousness of invasion, indistinctness of symptoms and physical signs—sometimes illegible—obstinacy of course, yielding little if at all to treatment.

If after the lapse of several weeks this latter form terminates fatally, post mortem discloses involvement of all the ramifications of the *outer* plexus of the bronchial arteries, *i.e.,* the external fibrous coat of the bronchi, the peri-lobular capsule, the inter-lobular connective tissue, the subpleural tissue, the bronchial glands, and even the nervous ganglia. The capillaries in the connective tissue of the nervous ganglia are engorged, and by pressure on the ganglia cause spasmodic dyspnea which supervenes in paroxysms most terrible to witness.

The only type of bronchitis of which a clinical account is requisite here, is that of the small tubes —suffocative bronchitis, suffocative catarrh. Always secondary, due to rapid extension from the larger tubes, its accession is so abrupt, so marked by profound collapse, small feeble pulse and anxious countenance, as to give the appearance of a primary affection.

Sudden distention of the inner plexus, by hyperemic swelling of the mucous membrane, may prove fatal before the stage of mucopurulent secretion. The rapidity of the respiration and pulse are out of all proportion to the other symptoms, and the respirations relatively accelerated far beyond the pulse rate. I have seen four cases in young infants where the respirations were 104 in two, and 108 and 110 in the others. Two pulse beats to one respiration is not uncommon, instead of three or four beats to one respiration, as in the normal condition.

The respiratory act is characteristic: A short labored inspiration, in which all the accessory

[1] One-half the cases in children under five years are fatal. (Samuel West)

inspiratory muscles participate, marked recession of the lower part of the thorax, and retraction of all the inferior intercostal spaces, followed by prolonged difficult expiration, in which the abdominal muscles participate. Whenever the expiration becomes prolonged in bronchitis, extension into the fine tubes is to be apprehended.

AUSCULTATION.

At both bases posteriorly, and especially over those narrow strips of lung between the angles of the ribs and the spine, and the tongue-shaped process of lung which overlaps the heart, fine crepitations are heard; or the tubes may be so blocked by tough mucopus, or so narrowed by tumefaction of the mucous membrane, that neither crepitations nor respiratory murmur are audible—the breath-sound entirely obliterated over both bases posteriorly.

TEMPERATURE.

The temperature has no diagnostic value. A patient may have a temperature of 104° F. at one hour, and of 100° F. at another time of the same day. A paroxysm of extreme dyspnea, great restlessness, constant tossing from side to side, may be attended by a temperature of 105° F., or even more. After a fit of coughing ending with vomiting, followed by sleep from exhaustion, the temperature drops to 100° F.

TREATMENT.

Clinical experience and pathological investigation, yield ample proof that bronchitis in a young child is never slight.

The coryza of to-day may before the morrow spread to the small bronchi, for, like its congener, catarrhal croup, its onslaught is commonly at night. To forestall and thwart extension is the pith of treatment. If this is accomplished fatal issue is averted. This is well-nigh attainable in every instance.

Distention of the branches of the bronchial arteries is the first deviation from the normal. The design must be to restrain and counteract this at its inception.

By the cutaneous capillaries, by the intestinal mucous membrane, and by cardiac inhibition, the initial lesion may be subdued and abridged; irritation of the mucous membrane may be abated by the air the patient breathes—mild diaphoresis, gentle catharsis, cardiac sedatives, warm soothing air for the irritated respiratory surface.

The temperature of the respired air should be uniformly 72° F.—day and night—sun exposure and open fire if practicable. Ventilation must secure at all hours pure, fresh air.

The child should be in a crib—never on a bed. The crib should be flannel-lined and be in the center of the room—never near a wall, window or door. Sometimes it is necessary to place screens about the crib to avoid draught.

Light flannel should envelop the child's body, arms and legs. The flannel shirt should be secured to the diaper by safety-pins, back, sides and front; long worsted stockings should be worn and likewise fastened to the diaper. The wrap and shirt must be loose and open in front, secured by tapes or safety-pins, assuring ready access for physical examination. A duplicate suit is to be kept in readiness. A quick hot bath precedes flannel envelopment.

In a case of moderate severity, nine-tenths of the treatment has been compassed.

DRUGS.

In severe cases the drug of unfailing, universal efficacy, is aconite. The bronchial arteries, branches of the aorta or intercostal arteries, subject to direct, immediate, forcible cardiac pressure, surge with blood. To restrain and limit this is the aim. Through this drug arterial pressure is promptly circumscribed. Maximum, frequent doses during the first hours; diminished, less frequent doses after four or six hours; early abandonment. It should be given in water only—tasteless, non-nauseating, it does not affect appetite. For a child of one year,

℞ Tr. aconite (Fleming) .....gtt iv
Aq. destillat .....ounces iii

M. Sig. One teaspoonful every fifteen minutes for one hour; every half hour for four or six hours; then every hour for twenty-four more hours.

Turgescence ceasing, the remedy is discontinued.

Arterial pressure is lessened by diaphoresis. Sweet spirits of niter is the pre-eminent diaphoretic. Niter, citrate of potassium, and spirits Mindererus may alone be used where aconite is not urgently indicated, and follows discontinuance of it. The combination often nauseates, and even more frequently affects the sense of taste so disagreeably that nourishment is persistently refused.

Intestinal elimination, diaphoresis, aconite and niter make up the febrifuge measures. Other antifebriles (baths, sponging, coal-tar derivatives) are, individually and collectively, contra-indicated.

Cold to the cutaneous capillaries is unphysiological, pernicious; conduces to extension.

STAGE OF SECRETION.

Excessive secretion may inundate the bronchi and must be anticipated and intercepted.

The agents which diminish secretion are camphor, carbonate of ammonia, nux vomica, oxygen inhalations and counter irritation. Spirits of camphor is the most valuable drug agent.

For a child of one year,

℞ Spirits camph. .....ʒi
Saccharin ..... gr. i
Spts. etheris nit. (for preventing precipitation of camphor) .....ʒii
Syrp. tolut. (for diminishing pungency)..ʒss
Aq. gaulth. q.s. *a.d.*.....ʒiii

M. Sig. One teaspoonful every half hour.

Carbonate of ammonia in one grain doses is a valuable adjuvant to this mixture, but often

provokes nausea. Nux vomica has the same objection.

When the tubes are loaded with tenacious secretion, mustard is of priceless service. One part mustard, six parts flour mixed with *cold* water and white of egg, and applied as a paste between two layers of thin linen, covering the entire region where moist sounds are heard, left on twenty to thirty minutes and renewed every two or four hours, according to the condition of the skin.

Where these resources have not been initiated at the opportune moment, or a child has not been seen until the bronchi are flooded with secretions, superinducing laborious and yet shallow breathing; on auscultation very few râles or none at all are heard, breath-sound absent over both bases posteriorly; pulse exceedingly rapid and small and disappears under the finger; suppressed cough from CO_2, medical art is put to its surest test, for even this extremity is surmountable by skilful adaptation of that knowledge and power born of pathology and experience.[1]

Impetuous stimulation is the common, almost universal blunder. The deluged tubes must be unloaded, emptied; respiration and oxygenation re-established. Blocked bronchi, soft yielding thoracic walls; weak, exhausted inspiratory muscles, make lobular collapse irresistible. The only redeemable, relievable factor is the obstruction to the passage of oxygen.

Witness the breathing become more and more shallow, until there is only slight movement of a few ribs and faint jerking contractions of the diaphragm; every untoward phase is accentuating swiftly. The swallowed sputa produces vomiting: The diaphragm, the abdominal muscles, the muscles of the lower part of the chest compress the thorax as in a vise. The tubes are squeezed, the contents forced out, mucopus wells out of the mouth. A sudden deep inspiration, the whole chest expands, the breath-sound is heard over the entire pulmonary area. Air has penetrated the most remote air-sacs; oxygenation is renewed, blood-cells revived, re-animated, cyanosis is replaced by vivid pink!

The position the child was in while vomiting —face downward—is maintained, the secretions gravitating to larger, sensitive bronchi, induce cough and are ejected in place of being swallowed. The cue is obvious—emetics, postural treatment.

When the air tubes are blocked by tenacious mucopus they can only be freed by active emesis. This should not be repeated more than once or twice in the twenty-four hours. Two or three clearings are adequate. The child must be kept in the prone position to secure gravitation of secretions to a sensitive mucous surface to avoid refilling. Oxygen inhalation must be *continuous* in this critical state—even during sleep.

These forceful resources are supplemented by mustard packs and maximum doses of spirits camphor and carbonate of ammonia.

[1] The cases mentioned on page 2 all recovered.

PROGNOSIS.

Hitherto harassing attacks of coughing become weaker or cease altogether, owing to obtunded sensibility from CO_2; suppression of râles without corresponding amendment; laborious and yet shallow breathing with recession of lower part of the chest walls and sinking in of the intercostal spaces; tympanitic distention of abdomen interfering with descent of diaphragm; sudden alteration of pulse-respiration ratio; small, rapid, irregular pulse which disappears under finger; apathy, drowsiness, ashy-gray face; fulness of superficial veins, cyanosis, cold extremities, are all most unpropitious tokens.

Diminution in frequency, and increase in depth of respirations, are the first indications of amendment. Râles and breath-sounds return, arteries become fuller, veins less full. In every chest affection in a child the abdomen must be solicitously watched to anticipate apprehensive distention. Dietetic care, and freeing from swallowed sputa, anticipatory of fermentation and tympanitic distention is uniformly obligatory.

INFLUENCE OF PREVIOUS FEEDING ON PROGNOSIS.

A young child previously fed on *any* patent or proprietary food, on pasteurized or sterilized milk, or for a prolonged period on condensed milk, almost invariably succumbs to bronchitis of the small tubes. The erroneously fed, flabby, soft-of-flesh, rickety child with hypersecretion, must be stimulated after emptying the air channels by vomiting. He who individualizes is the highest type of the medical practitioner.

Laryngo-tracheitis, tracheo-bronchitis, and bronchitis of the large and medium-sized tubes are usually broken and ended by the proper management.

An efficient remedy for harassing cough in inflammation of the upper respiratory passage is oleum ricini.

For a child of two years:

℞ Olei ricini .....oz. ½
Saccharin .....gr. ii
Acacia pulv. .....q.s.
M. Ft. Emulsio et adde.
℞ Spts. etheris nitrosi .....oz. i
Aq. calcis q.s. *a.d.*.....oz. iii
M. Sig. One teaspoonful every hour.

When cough is distressing, counter-irritation over larynx and sternum may be superadded in the form of flaxseed poultice with mustard sprinkled over its surface.

In older children where the irritation of coughing superinduces nervous irritability, it may become necessary to supplement the prescription by small doses of codeine.

In inflammation of larynx, trachea or bronchi with much temperature, aconite should always be to the fore.

STEAM INHALATION.

Steam inhalation does not meet one physiological, pathological or symptomalogical indication that is not better, more completely and far more wisely fulfilled by the breathing of warm air, by dilatation of the cutaneous capillaries, by aconite, and by counter-irritation.

Steam inhalation increases susceptibility to cold, to catarrh of the larynx and bronchi—to catarrhal croup.

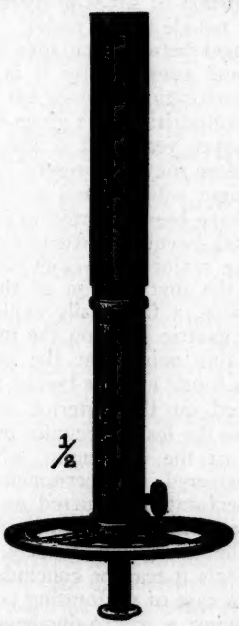
A croup kettle, therefore, must never be used except for croup.

25 West Thirty-seventh Street.

A PIESEOMETER FOR THE ACCURATE DETERMINATION OF ABDOMINAL RIGIDITY.

BY THERON WENDELL KILMER, M.D.,
OF NEW YORK.

IT frequently happens that the physician, when examining a patient, notes a rigidity of some portion of the abdomen. A few hours later, or the next day, he examines the same patient and finds that to his touch the same part of the abdomen, which he had previously examined, displays either a greater or smaller degree of rigidity.



This sense of feeling is imparted only to the examining hand. We cannot put down on paper how rigid the abdominal wall was, nor how much more rigid it has become during the last few hours or days. We cannot write to a medical friend in another city how rigid we have found the abdominal tissue, for our friend's sense of touch would be altogether different.

To sum up the above illustration: It has formerly been found impossible to determine abdominal resistance with any degree of uniformity. With the present instrument, of which an illustration is shown, it is possible to obtain data which are of much service both in diagnosis and in the keeping of the histories of cases. A surgeon can keep track of the rigidity of the abdominal wall in supposed cases of appendicitis and peritonitis, or in cases of abdominal tumors.

In the experiments which I have made with this instrument during the past six months it has been successfully demonstrated that there is no uniformity of muscle resistance, that is to say, we cannot have any one unit represent normal resistance. We cannot say that the abdominal resistance in a certain case is so much and then infer that all other abdomens, to be in a normal condition, must register the same amount of resistance. There are many factors, such as abdominal fat, position of the patient, whether the patient is asleep or awake, quiet or crying, etc., that make it impossible to have any normal index of resistance. Every one is a law unto himself when it comes to measuring muscle rigidity. What can be definitely determined, however, in any individual patient, is that one can tell whether that given individual abdomen is more, or less, rigid than it was at a previous examination.

A description of the pieseometer is as follows: A delicately tempered and accurately tested spring is concealed in the handle of the instrument. This spring is accurately gauged so that it will take so many pounds' pressure to press the small knob at the end of the plunger a given distance into the tissue, muscle for instance. This plunger is so arranged that it may be drawn out to any distance from one-eighth of an inch to three inches. The metallic disk is used, as it were, as a horizon line. The index of resistance of a given part of an abdomen is a fraction, the numerator of which is the number of pounds' pressure which it takes to press the plunger up to the horizon line (metallic disk) into the abdominal tissue. The denominator of this fraction is the length at which the plunger was set. Example:

$$\frac{2 \text{ (pounds pressure required)}}{\frac{1}{2} \text{ (inches, the plunger was extended)}}$$

Therefore, in the above example, it took two pounds' pressure to press the plunger set at half-inch up to the disk into the abdominal wall. There is a sliding indicator which remains each time at the number of pounds' pressure required to press the plunger in any given distance.

Let us suppose we wish to ascertain the resistance of the right side of the abdomen over McBurney's point in a man of medium weight whose abdomen does not possess a large amount of fat. We should have the patient in the dorsal position with thighs slightly fixed on abdomen, and legs slightly fixed on the thighs—the usual position when palpating an

abdomen. Setting the plunger at ½ inch and pushing back the ring index indicator to zero, we press the plunger against the skin, pressing straight down until the horizon line (round metallic disk) touches the skin. Then reading the number of pounds' pressure required to press the plunger half an inch into the abdomen, we have an index of resistance for this individual case of perhaps $\frac{3}{\frac{1}{2}}$ which means that it took 3 pounds of pressure to press the plunger into the abdominal wall a distance of half an inch. This index of resistance ($\frac{3}{\frac{1}{2}}$) is noted in the history. Now, in a given time, a few hours afterward, or next day, a second examination is made over the same point, with the plunger set at the same distance (½ inch). If it now takes 3½ pounds' or 4 pounds' pressure to push the plunger in a distance of half an inch, we have a greater index of resistance, namely, $\frac{3\frac{1}{2}}{\frac{1}{2}}$ or $\frac{4}{\frac{1}{2}}$. This shows that the muscle is more rigid than it was at the previous examination. If we had examined this abdomen with the aid of only our sense of touch, this increase of resistance might have been so slight as not to be appreciable. In an abdomen whose index of resistance at various examinations shows an increase and whose bedside record is as follows—

2	2½	3	4
½	½	½	½

what is our inference? It can only be that the abdominal muscles are becoming gradually more rigid from the presence of intra-abdominal inflammation or tension.

In examining the abdomen we should use our judgment regarding the length of the plunger. It may be necessary in a very fleshy person to extend the plunger to a distance of an inch or and inch and a half, according to the amount of adipose tissue between the skin and the abdominal muscles.

There is but one cardinal point to be remembered in using this instrument, and that is, the plunger should be extended to the same distance in each examination of the same point on the same patient.

The instrument should be warmed before placing it against the skin.

The metallic ring of the instrument can be unscrewed, so that the instrument can be very easily carried in the pocket. This instrument was made for me by the Kny-Scheerer Company, to whom—especially to their Mr. Goldstein—I am greatly indebted for the excellent manner in which they have accurately carried out my ideas.

White River Medical Association.—A regular meeting will be held at the Junction House, White River Junction, Vt., Tuesday, November 28, at 1.30 P.M. Program: "Infantile Paralysis," by Dr. E. A. Barrows; "Contract Service."

A CASE OF PERFORATION OF AN ULCER OF THE DUODENUM, WITH REMARKS ON THE DIAGNOSIS AND TREATMENT OF THIS AFFECTION.

BY CHARLES GREENE CUMSTON, M.D.,
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PERFORATION is a frequent complication of ulcer of the duodenum, and is apt to be the first manifestation of the disease, which often remains latent. Collin found that this took place in 181 cases out of 262, in other words, a proportion of 69 per cent., although this may be looked upon as somewhat large, since many cases where these ulcers exist remain without symptoms and are only diagnosed at autopsy. However this may be, perforation of the duodenum is far from being an infrequent occurrence.

Perforation of the duodenum, as well as ulcer, is more frequent in the male than in the female, contrary to what is observed in the case of gastric ulcer, and from this very fact the diagnosis may be cleared up to a certain extent. Without going into the statistics, I may say that having consulted the records of a large number of cases I find the proportion of sexes in ulcer of the duodenum is one female to five males. This process is more frequent between the ages of thirty and forty years and consequently it is during this decade that perforation is more apt to occur, although some authorities have given the mean age about thirty-seven years. It is also evident that a duodenal ulcer may be present and perforate in much younger subjects and a certain number of instances have been reported in patients varying in age from twenty to twenty-eight years.

In the large majority of cases the ulcer is to be found in the first portion of the duodenum near the pylorus, a fact easily explained by the action of the gastric juice on the mucosa. It is precisely at this point that the perforation is nearly always found and the loss of tissue is usually discovered on the anterior aspect of the organ, because the lesion occupies the most movable portion of the duodenum, which is more completely covered by peritoneum. Alloncle found that perforation occurred on the anterior wall in 66 per cent., and Collin came to practically the same conclusion, namely, in 59.6 per cent. From this it may be concluded that when dealing with a case of perforating peritonitis suspected of having a gastro-duodenal origin, the anterior aspect of the duodenum and especially the first portion of this organ should, in the first place, be explored. The perforation, when seen, usually presents a regularly formed orifice parallel to the insertion of the omentum; its borders are usually clean cut; in the large majority of cases a single perforation was present, but there have been instances where several have existed. When this is the case they are usually symmetrical and one should always bear this fact in mind in order to avoid an incomplete interference.

Perforation naturally results in the immediate entrance of the intestinal contents into the peritoneal cavity and the resulting process will differ according to the circumstances. Nearly always an acute and rapidly generalized peritonitis occurs, which, in most instances, has been fatal, but the generalization may be absent in some. Under these circumstances the purulent collection has a tendency to become localized under the liver, in the right hypochondrium, or even in the iliac fossa on the same side. Several operative cases have been reported which were diagnosed as appendicitis, and even after the abdomen was opened the real lesion was not discovered. The amount of damage done to the peritoneum naturally varies accordingly to the time elapsing between the perforation and death, and besides those cases where any inflammatory reaction was absent on account of the very rapid death of the patient, there are others where the inflammatory process has had time to take place and has given rise to more or less disturbances. Under these circumstances all degrees of peritonitis may be met with, from simple hyperemia, especially marked on the visceral peritoneum and omentum and the unpolished and rough aspect of the serous membrane, with an accumulation of cloudy fluid containing flakes of fibrin in the declivous portion of the pelvis, up to adhesions of the intestional coils and omentum by means of yellowish or greenish false membrane with an abundant formation of pus. Gas may be also met with, mixed with the exudate, which, however, is usually not fetid, as well as particles of food, altered blood and occasionally bile. A fact well worth noticing is that in some cases the peritoneal lesions have a decided tendency to become localized in the small pelvis. This localization is easily explained because the infectious matter thrown out from the duodenum into the peritoneal cavity is stopped in its progress by the omentum and can then only travel downward between the latter and the anterior abdominal wall and can infect the general peritoneal cavity only after having gone beyond the lower limits of the omentum. In very exceptional cases, certainly much more infrequently than in cases of perforation of gastric ulcer, acute peritonitis is momentarily delayed and sometimes even prevented, in which case one of two conditions will be found: Adhesions sufficiently resistant may have formed before perforation took place and thus gave rise to a circumscribed peritonitis so that it is only later that the inflammatory process becomes generalized after rupture of the walls of the pocket has occurred. A periduodenal focus has been known to give rise to a fistula through the abdominal wall, the opening being in the region of the umbilicus. On the other hand, one of two neighboring viscera, which is in contact with the perforation, acts like a plug and prevents the fluid from leaking into the peritoneal cavity. Usually this is the pancreas, but the liver and gall-bladder have fulfilled the same part, and the two layers of the omentum may also accomplish this.

As perforation of ulcer of the duodenum is not of frequent occurrence, I deem it worthy to record the following case, which occurred in my practice recently: The patient, male, forty-three years of age, had always enjoyed good health, although he showed some slight evidence of alcoholism. For the last year, however, he had suffered from time to time with attacks of epigastric pain, although not very acute, occurring an hour or two after eating.

On June 16, 1903, he was suddenly taken after a hearty breakfast with a very sharp pain in the right side, which he localized under the liver. The pain increased rapidly in intensity and vomiting of a bilious nature soon took place. The physician summoned, believing the case to be one of acute gastritis, administered one-fourth grain of morphine subcutaneously and ordered the patient to be put to bed. At noon, however, there was such evidence of collapse, with a very small, weak pulse, accompanied with abdominal distention, that the case was considered to be more serious, and I was asked to see the patient.

Upon examination, the abdomen was found distended and by percussion it was everywhere tympanic. The pulse was 140, temperature normal, respirations 24. The patient was continually vomiting an extremely acid bile-tinted fluid. There was no particularly tender spot in the abdomen and on account of the considerable distention, practically no information could be derived from palpitation, but from the past history of attacks of pain in the epigastric region, as well as the sudden onset of the present condition, a diagnosis of perforated gastric ulcer was made and operation advised as soon as the first phenomena of shock had disappeared. After two subcutaneous saline infusions the patient's condition improved, the pulse becoming stronger, so that at four o'clock in the afternoon the abdomen was opened in the median line from the sternum to the umbilicus.

Upon exposing the stomach a seropurulent fluid containing particles of escaped ingesta, and upon closer inspection it appeared to be oozing from the pyloric region. A second incision was carried to the right perpendicularly to the first, in order better to expose the pylorus. Both inspection and palpation of the anterior and posterior aspect of the organ were negative, no perforation being found; but the upper part of the duodenum appeared collapsed and just below a large quantity of dark fluid, having an intensely acid reaction, escaped. The diagnosis of a perforated ulcer of the duodenum was made and it was believed to have taken place on the posterior aspect of the organ, because all the portion of the duodenum that could be inspected showed no evidence of perforation. As the patient's condition was very poor, the stomach, transverse colon and

omentum were pulled together with sutures in order to prevent if possible a leaking of the fluid into the general peritoneum, and two large drainage tubes were inserted and the wound packed with iodoform gauze.

For the next forty-eight hours the patient remained in a very serious condition, and at the end of this time it was evident that the general peritoneal cavity had become infected and that a general peritonitis was present. Consequently, an incision was made in the median line just above the pubis, the abdomen thoroughly washed out with salt solution and drained by two large tubes.

After this second interference the patient's general condition began to improve steadily and after a very slow convalescence, covering about eight weeks, he finally recovered. In June, 1905, just two years after the operation, we had news of the patient, who reported himself as being in perfect health.

In going over the reported cases of perforation of ulcer of the duodenum, it at once becomes evident than this condition presents no symtomatology belonging properly to it, and all that can be said is that it gives rise to the same symptoms as those met with in intestinal perforation, or that of the stomach. In order to make the description of the symptomatology as clear as possible, we may divide the clinical symptoms to which perforation of the duodenum gives rise under three heads, namely, the symptoms present before perforation has taken place, secondly, the symptoms of perforation, and thirdly, those belonging to the resulting peritonitis.

In many instances symptoms presented before perforation are absolutely wanting and the accident occurs in the midst of a flourishing health. This sudden commencement without any previous symptoms is met with in probably about 66 per cent. of the cases. In those patients who give evidence of gastric disturbance before anything happens, one may meet with digestive symptoms having no precise characteristic, such as flatulency, a feeling of fulness after eating, and constipation. In others, however, there may be more definite symptoms, such as pain in the epigastrium, attacks of gastric pain with vomiting, hematemesis, or melena, which often leads to the diagnosis of gastric ulcer, but I am aware of no case where the diagnosis of duodenal ulcer has been made before perforation has taken place.

When perforation occurs the most noteworthy point is the suddenness of the commencement and the rapidity of the accidents. After a slight effort, or even without any appreciable cause, the patient is taken suddenly with an acute and very severe abdominal pain, which usually results in collapsus; the face becomes pinched, the eyes are sunken, the extremeties become cold and covered with sweat, the respiration is rapid and superficial, while the pulse runs high and is very weak and depressible. The commencement is sudden and dramatic, while the pain, as I have said, is extremely severe, causing the patient to cry out, and has been of sufficient intensity even to result in fatal syncope.

There are instances where the pain has been described as if some organ had been torn, immemediately followed by a sensation as of liquid flowing into the abdominal cavity; and this pain, which in the first place is distinctly localized in the right hypochondriac region, less frequently in the epigastrium or in the left hypochondrium, is not long in extending throughout the entire peritoneal cavity. In some cases pain has been complained of in the right shoulder. Collapsus is also a fairly constant symptom of perforation and rarely is wanting; the temperature is subnormal, quite in contrast with the rapid pulse and respiration, while a cold sweat and a marked state of stupor indicate the serious condition of the patient. Vomiting may also be met with at this stage, but is more apt to occur a little later, at the time when peritonitis develops. In other cases the perforation has been accompanied by a chill followed by a rise in temperature, although the latter is of short duration.

Besides the above symptoms, physical signs obtained by a methodical examination of the patient may sometimes reveal the presence of fluid in the peritoneal cavity. This is made evident by a more or less marked distention, which is accompanied by the disappearance of liver dulness and pushing up of the diaphragm. The upper part of the abdomen may first show tympanism, while dulness will be found in the declivous portion. Palpation is extremely painful at the commencement, but in certain cases a variable amount of fluctuation has been elicited. Auscultation may possibly allow one to hear the air which has escaped into the peritoneal cavity, although this sign is more or less problematical.

The peritonitis following is characterized by an aggravation of all the above-named symptoms with the exception of pain, which may subside or even disappear. Usually the collapsus remains marked and hides the inflammatory reaction arising in the peritoneum, and for this reason the initial chill and elevation of the temperature are generally moderate, contrary to what is observed in acute septic peritonitis. They may even be wanting completely and the temperature subnormal. Instead of increasing, the pain becomes less intense a few hours after perforation has taken place, and in some instances it has throughout been so slight that abdominal palpation hardly gave rise to any discomfort whatsoever.

The predominating symptoms at this stage of the process may be summed up as vomiting combined with constipation, rarely with diarrhea, tympanism and dyspnea. Vomiting may occasionally arise at the very commencement of the process, but it is more prone to occur when peri-

tonitis sets in. The liquid is in the first place of a mucous nature, but becomes rapidly bilious and in several reported cases fecaloid matter has been thrown up, similar to that observed in intestinal obstruction. Hiccough may be extremely obstinate. Constipation is the rule, and if to this we add dysuria or anuria, as sometimes happens, everything seems to conspire to lead to a diagnosis of intestinal occlusion. The tympanism and dyspnea increase in intensity, while the vomiting and hiccough become less severe. The collapsus increases until the fatal outcome, the pulse becoming weaker and weaker, while the features show all those characteristic evidences of approaching death. The evolution of the symptoms is usually extremely rapid and, although the patients may survive from two to four days, they rarely hold out more than forty-eight hours. Some, however, have lived as long as a week, but here the transformation of peritonitis to the chronic type is very exceptional.

From what has been said it at once becomes evident that the prognosis in these cases is extremely serious and this is due partly to the shock resulting from perforation, as well as to the consequent peritonitis, which has little or no tendency to become limited. Then, again, there is the danger of auto-infection from the septic liquid contained in the peritoneal cavity, and death will soon occur unless an early surgical interference prevents the process from continuing. There have been a few cases reported where the symptoms have been almost insidious, and this has been due to the fact that adhesions have had sufficient time to become organized, the result being an encysted peritonitis. The commencement is less dramatic and the pain far less marked, while the phenomena of shock may be wanting, so that in a few days the patient is perhaps able to resume his occupation. But this is a remission of not long duration, and after a certain time the patient dies, either from the opening of an abscess into some neighboring viscus, a generalization of the peritonitis, or the progressive evolution of the cachexia, the cause of which remains unrecognized; and here it is only at autopsy that evidences of a more or less old perforation of the duodenum are discovered.

The diagnosis of perforation of a duodenal ulcer is far from being an easy matter and the principal aim of the surgeon should be to differentiate the perforation and the resulting peritonitis from those affections which they may simulate, and to locate the probable seat of the perforation. The diagnosis of peritonitis from perforation is based upon two principal signs, namely, the sudden sensation of tearing within the abdomen, immediately followed by intense pain and collapsus, and the disappearance of hepatic dulness, which is replaced by tympanism. When these two symptoms are not distinctly marked the diagnosis remains faltering. When perforation takes place the syncope and rapid death which have been observed in some cases have led one to believe that there was an internal hemorrhage or poisoning, whereas when peritonitis develops, the differential diagnosis rests especially with intestinal occlusion.

One observes in internal hemorrhage, as in perforation, a rapidly developing collapsus, with cold extremities and a weak pulse, but the expression of the face is not pinched and the integuments and mucous membranes become rapidly blanched. There is one little point which I may mention in making a differential diagnosis between perforation of a gastric or duodenal ulcer and internal hemorrhage, when the radial pulse is wanting; examine the femoral artery and pulsation will be discovered which is usually more marked than in a normal condition, this being probably due to the stimulation caused by the peritonitis. Consequently the absence of pulsation at the wrist, but with a marked pulsation of the femoral artery, with allow one immediately to eliminate an internal hemorrhage. Of course, in some cases perforation of the ulcer will give rise to an internal hemorrhage, but, under these circumstances, hematemesis or very abundant melena will usually be met with.

On several occasions, on account of the very rapid evolution of the accidents, poisoning has been supposed to have occurred, when in reality the case was one of perforation of a duodenal ulcer, but it is well never to mention the word poisoning before the family unless one is absolutely sure of one's diagnosis, because if once the word has escaped the lips it will resound in the ears of the patient's relatives, who will afterward think of nothing else.

It is not infrequent in cases of peritonitis resulting from perforation to meet with phenomena of pseudo-strangulation, numerous examples of whch have been published by Duplay. In the commencement the symptoms are quite the same; there is absence of fecal matter, the pain ceases after a few hours, while there is vomiting and subnormal temperature, but the evolution of the process is entirely different. In occlusion the pain is less intense and not so sudden, with paroxysms resulting from the peristaltic movements of the intestine, the loops of which may be seen distended under the abdominal integuments, whereas in peritonitis the pain is sudden, sharper and more superficial, and becomes rapidly generalized throughout the abdomen. In intestinal obstruction the vomiting is in the first place mucous or bilious and finally becomes fecal, but distinctly porraceous vomiting, so characteristic of a perforation, is never observed. The tympanism accompanying peritonitis is everywhere equal throughout the abdomen and by auscultation the bubbles of air may be heard passing from the duodenum into the peritoneum, but in strangulation usually only a portion of the intestinal canal is distended, which results in a limited distention of part of the abdomen, while in

some cases percussion elicits dulness below the umbilicus, a fact which would be in favor of peritonitis. A subnormal temperature occurs late in occlusion, whereas in cases of perforation it is early in the process, accompanied by a weak and miserable pulse. Constipation is absolute in intestinal occlusion, but in peritonitis it may not be so marked and can even give place to diarrhea; and finally, in intestinal obstruction the general symptoms are slower in making their appearance than in peritonitis, this being due to the fact that there is a very rapid intoxication of the organism by the septic liquid contained in the peritoneal cavity in cases of perforation, which is rapidly absorbed. All these differential symptoms are far from being always distinct, and much must rest in the good clinical sense of the surgeon to seize the various diagnostic shades in order to come to a correct diagnosis, a matter which under the most favorable circumstances is a delicate one.

It is hardly necessary to refer to the possible mistake which could be committed in cases of diabetic coma, which might possibly bring to mind the question of perforation on account of the symptoms presented, such as sudden and very severe pain, pinched expression and dyspnea, the last in this case more marked and accompanied with a small pulse and collapse. Hesitation is quite permissible where an examination of the urine has been neglected and the patient's breath does not emit any odor of acetone.

Generally speaking, the diagnosis of peritonitis presents insurmountable difficulties and these are rendered all the greater when one endeavors to recognize the true seat of the perforation when the latter has been diagnosed. The topographical diagnosis has never been made, as far as we are aware, in any case of perforated ulcer of the duodenum, but the importance of this cannot be denied by any one. Inasmuch as the operation can be carried out with greater rapidity and the prognosis depends almost entirely upon this, the operative success being entirely related to the promptitude of the operative act, it becomes evident that every endeavor should be made to come to a correct conclusion, because it not infrequently happens that after the abdomen has been opened, the perforation has remained unseen and consequently the interference has been incomplete. In the first place one may set aside those cases in which perforation has resulted from some casual affection, such as typhoid fever, tuberculosis or dysentery, which ordinarily do not remain ignored and the knowledge of which results in the diagnosis of the probable location of the perforation. Then again it is very evident that if a peritonitis occurs in a subject who has had attacks of appendicitis or gastric colic which have been well defined, all presumptions are in favor of a perforation of the appendix or the stomach, inversely, circumstances may render legitimate certain presumptions relative to the existence of a duodenal ulcer and a careful examination of recorded cases shows that the symptoms usually appear in the midst of an excellent health and nearly always in an adult man shortly after eating or drinking. The pain is usually seated under the liver on the right side of the median line; vomiting rarely is missing and may appear at variable intervals after the occurrence of the first symptoms. If to these symptoms one may add attacks of pain occurring at intervals in the intestine two or three hours after eating, seated at the spot already mentioned and accompanied with hematemesis, or what is more usual, with melena, the presence of a perforated duodenal ulcer may be assumed with certitude. It is, however, rare that the above signs are so precise and the difficulty commences when the accidents suddenly appear, as is usually the case, in a patient whose gastric or intestinal antecedents show nothing.

The question at once arises whether one is dealing with a perforating appendicitis, or a latent gastric ulcer, or one of the duodenum, and the solving of the question is occasionally practically impossible. The seat of the initial pain should always be taken into serious consideration and in these cases the best sign leading to a diagnosis is without any doubt the seat of the greatest pain, either spontaneous or produced by palpation. In perforation of the appendix the most painful spot will usually be found rather to the right of the umbilicus and in the vicinity of McBurney's point, but very frequently the pain is diffused, the patient complaining of the left iliac fossa, the epigastrium or the right hypochondrium. Under these circumstances rectal examination is of great utility in order precisely to locate the site of the pain or to recognize the presence of a mass in the region of the cecum. When the lesion is seated in the stomach the pain is in the first place quite distinctly limited to the epigastrium and shoots toward the left hypochondrium or between the scapulæ. When the duodenum is the seat of the perforation the pain is at first more apt to be felt in the right hypochondrium or just below the costal borders and this explains the mistake ordinarily committed in believing the case to be one of appendicitis, all the more so because the most evident focus of peritonitis has been met with in the ileocecal region in these cases. I would, however, point out that usually the commencement and the symptoms of peritonitis from perforation of a duodenal ulcer are much more sudden and far more dramatic than those met with in the early period of perforated appendicitis. In the latter affection the suddenness and intensity are never as great as in cases of peritonitis resulting from perforation of the duodenum and the latter can only be compared with a perforation of gastric ulcer.

In order to come to an exact diagnosis it is well to recall that ulcer of the duodenum is far more frequent in the male, contrarily to what is observed in gastric ulcer; that the former is usually very latent, whereas the latter will already have given evidence of its presence, and it would also appear that vomiting is a more constant symptom in perforation of duodenal ulcer than in the same lesion of the stomach. I would point out one diagnostic means in our possession which may be utilized as the last resort, namely, that if the symptoms are not sufficiently typical to lead one to suppose that the appendix is at the seat of the trouble the surgeon should examine the region of the duodenum, at which point the lesion will most usually be found. Then, again, the absence of any fecal odor will lead one to think of a perforation of either the stomach or the duodenum, whereas a very acid abdominal collection will lead to the same conclusion. A small incision made just below the umbilicus will enlighten one as to the nature of the fluid contained in the peritoneal cavity.

From what has been said it becomes evident that in spite of a very close examination there are many instances where the site of a perforation cannot be diagnosed before the abdomen is opened and in such uncertitude it is only right, as soon as the peritoneal cavity is exposed, first to assure oneself of the integrity of the cecum and the appendix, after which the stomach and duodenum should be examined, when the perforation will be discovered.

Naturally, there is but one treatment for perforation of duodenal ulcer, and that is laparotomy. It is only proper to divulge the many instances of rapid death in order to show the general practitioner and the patient's family how every minute is precious and with what rapidity the slightest hesitation increases and multiplies the danger. Here, as in every other case of perforation, statistics show that those cases which are operated on within the first twelve hours following the initial symptoms are those which have been crowned with success, although in one successful case the operation was not undertaken until forty-eight hours had elapsed. In a few cases the perforation was found at operation, but its closure by sutures has rarely been accomplished, and in most instances drainage alone has been resorted to and recovery has resulted. It is quite true that the number of interferences for this condition are as yet too few in number to furnish any exact conclusion, and it must also be recalled that an exact diagnosis before the abdomen has been opened has rarely, if ever, been made. However, taking all reported cases together, it would seem that the great number of unsuccessful outcomes is due, above all, to two circumstances, namely, a too tardy interference and an erroneous diagnosis. It is quite evident that a diagnosis of perforation of the duodenum is always an extremely difficult matter, but, when one is aware that this accident can occur, it will be more likely to be discovered and it is to be hoped that in the future the results of operative interference will be less unfavorable, because this pathologic process is becoming better known among surgeons.

It is always well to let the initial shock pass by and allow the patient to regain some strength before opening the abdomen, and I believe that from three to four hours is usually sufficient for this to take place. In order to expose the perforated duodenum the best incision would naturally be one made parallel to the linea alba about five centimeters or a little more to the right, commencing at the eighth costal cartilage and made as long as requisite for the case. But, since the diagnosis is rarely sufficiently evident so that one can be certain of a lesion of the duodenum, an incision in the median line will ordinarily be resorted to.

When the perforation is easily accessible one has at his disposal, as in gastric ulcer, three technics, namely, suture of the perforation with or without resection of the ulcer, intestinal anastomosis with or without resection, and thirdly, enterostomy, or fixation of the borders of the ulcer to the abdominal wound. The first procedure should be employed when possible, while the other two are to be reserved for those cases where the changes in the tissues are so extensive that it is not possible to suture, enterostomy being resorted to in those cases where the patient's condition obliges one to act with speed. If the perforation is difficult to reach so that no sutures can be used, all that can be done is to wall off the parts and resort to large drainage tubes and gauze packing. If the general peritoneal cavity has become involved, it should be opened in the median line above the pubis and drained at this point. I would recall to mind that occasionally several perforations may be met with, and for this reason if one has been able to suture one perforation it is always well to look for others in order to avoid any mishap from overlooking other openings.

The postoperative care requires much thought and consists in keeping up the strength of the patient and favoring the elimination of the toxic substances.

Treatment of Xanthoma-Like Degenerations.—CHARLES WARRENNE ALLEN describes a treatment (*Med. Rec.*, September 23, 1905) of xanthoma-like degenerations of the lip by the high frequency spark. This condition, due to degeneration of the protoplasm of the epithelial cells into a substance closely allied to keratohyalin, is quite common. Former methods of treatment have not proved satisfactory. The treatment advised makes use of a static machine and a hyperstatic transformer, a large carbon electrode, a spark gap of two inches, and a contact spark of about an eighth of an inch, or one which will cause almost at once a marked whitening of the surrounding pink of the lip. Two or three sittings usually suffice and the pain is trifling.

CARE OF THE AGED AND THE INFIRM IN THE TROPICS.

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THE theme which I will attempt to unfold in the brief time at my disposal, if you will concede me your indulgence, is the care of the aged and infirm. It should be taken into consideration that the information is taken from the very little to be found here and there in the treatises at my command on subjects having some relation to the material included in the title of this article. This, added to my own limited knowledge, acquired in the practice of the profession, composes the very meager paper which you will now hear. If I am able to hold your attention it will give me much satisfaction.

Before entering upon the principal point of dissertation, permit me to say a few words in regard to the manner in which the aged were treated in these islands before the arrival of the Spanish, and until shortly before the termination of their sovereignty here. Following that, I will cite the principal phenomena which ordinarily occur in old age, specifically naming those characteristics most common in old age among the Filipinos, and I will close with the hygiene or proper care of men in senility, considering them individually, giving in conclusion some indications as to the proper manner of carrying this out.

Here, as in all countries having primitive customs, an old person was an object of great consideration and respect to his fellows, and exercised much influence and authority over his fellow citizens. Apropos of this, let us hear what the distinguished student of Filipinology, Dr. Pardo de Tavera, says in his folio entitled "The Customs of the Tagalogs in the Philippines, according to P. Plasencia." Treating of the Datos and Barangayes, he says: "These people always had chiefs whom they called Datos who governed, and were captains in their wars. These men were obeyed and reverenced, and the subject who committed any crime against him or said any word to his wife or child was gravely punished," etc., and explaining the word "Datto" he says, "Dato to-day is not used in Tagalog. In Malay, Datu or Datuk signified primitively grandfather, head of a family, which was in fact what constituted a Barangay. In Mindanao and Jolo this name is preserved and used to designate certain chiefs."

In a note to the treatise of the same author on land holdings, he says: "All the towns of the Malay race were governed, and some are even today, by an Addat, which, literally translated, signifies a custom or usage. The laws which were not written were transmitted by tradition from father to son. The most aged, as being men of the most experience, whose age had permitted them to observe their own customs for the longest time, were those who ordinarily decided litigation." When they rendered their decisions they did not say, "The law orders it so," but "Such is the custom," which in Tagalog is "Ang ugali." So much for the author above named. In our days there has been preserved, until within a short time, a councillor's post in the barrios of the towns, held by the "Matandá say nayon," which in Spanish would be called "El viejo del Lugar" (the oldest man of the barrio). He was the representative of authority in the distant places, and through his mediation the orders of the Government and its regulations were complied with, and many times he adjusted the dissensions and disputes of his fellow citizens when they were of small moment, so that it was a rare thing that they were not given a hearing.

Having made this short historical résumé, let us now pass to consider whether old age constitutes a pathologic condition or is simply a phase of existence.

Cicero said that old age is a disease, and various later medical writers accepted this phrase, employing it as an argument in the treatises which they have written concerning the diseases of advanced age, and Charcot himself, treating of the modifications that the structure of the organs suffer in the aged, says that they are of such nature that they may with the greatest ease be confounded with other lesions, which should be considered as absolutely pathologic. We will not dally with lucubrations and scientific disquisitions to prove the intimate nature of old age, still less to explain the intricate labyrinth of its obscure causes, as hidden and unknown as is the essence of life itself, or is the unfolding of the organs in infancy and adolescence, since they escape, impalpable, the most conscientious and scrupulous investigations. Sufficient is it to us to know that old age comes on in that period of existence in which the energies of the organs that compose the body are sapped by wear and tear, and the re-integration of the tissues takes place slowly and with difficulty. In advanced age the inorganic matter is augmented, and the amorphous or dead matter predominates over the living and protoplasmic. It is not our intention to study the transformation that the tissues suffer, nor the influence that this transformation exercises in the functions of the organs. We will only indicate, for the purpose of giving a general idea and for the purpose of following up to a certain point the processes, of which Cajal has happily remarked that they are the preparation which facilitates during life the work of death.

The pathologic beginnings of senility originate at that moment in which the functions of the aged, through change in the texture of the tissues, have changed so much from the normal that there is a lack of equilibrium among the various functions, originating a condition prejudicial to the general health and one which we may call a pathologic period. But if we consider the old man in that epoch in which such notable changes have not yet taken place in his tissues, nor therefore in his functions, but at the time when the

functional activity has simply diminished, we shall not be able to consider old age as a pathological condition. We must look upon it as one which differs from the action of the organs of a man in the prime of life, and on that account is not to be considered non-physiological, but belonging properly to the latter days of the life, which Canstatt has described under the name of senile involution. Following this period, according to Boy-Tessier, the following changes occur: (1) Atrophy of the tissue elements. (2) Progressive infiltration of the various tissues with organic elements, or inorganic material, foreign to their original constitution. (3) Excessive production of connective tissue.

It is a proved fact and one in which all hygienists concur, that old age, as a general rule, comes on more quickly in hot climates than in cold or temperate, in the same manner as puberty is earlier in the former and retarded in the latter. This law (let us call it such) is complied with in this country. Old age commences, as a general rule, among the Filipinos at a period of from forty-five to fifty years. To this statement, perhaps, there may be some objection, say that the observer has noticed faces which indicate that certain persons seem to be younger than they really are. If old age had no other manifestation than the appearance of the physiognomy, certainly among the Filipinos old age should arrive very late, but unfortunately this is not so. Other more important signs indicate this period in which life declines, and in proportion to its advance all the functions demonstate commensurately that the cycle of existence is about to terminate. We have observed here that the first manifestation of old age, as a general rule, begins with the weakening of the memory. This fact, we believe, may be explained, if it is taken into account, that the genital functions are more active in hot climates and the loss which this produces in the bodily economy is reflected first in the cerebral functions, affecting primarily the memory; whence it is, that there may be observed with frequency in this country those cases of dulness which in the Tagalog idiom are "Nahihibing," lack of memory. But this fact should not be interpreted as peculiar to the Filipino race, or linked to reasons purely ethnical by the means. We believe that none who find themselves under the influence of the tropical climate are free from its effects. It may be, perhaps, that the resistance of a stronger, more vigorous race would retard somewhat the advent of this sign of the decay of the cerebral organ, but nevertheless the fact exists, and observation of many of the white race have confirmed me in this belief.

Other signs that characterize old age generally occur between the fiftieth and sixtieth years. These are the whitening and falling of the hair, the loss of the teeth, the wrinkling of the skin, the shortening of the stature, the lessening of the weight of the body, and the decay of the special senses. The intelligence is debilitated, memory is lost, and sensibility is deadened. The affected faculties disappear progressively until the condition reaches, at times, senile dementia. With senile involution it happens, as is natural, that the more advanced this period is, the more predisposed the aged are to sudden death from determined causes. This explains how rarely death occurs from advanced age only, and how, therefore, old age is variable, since it is terminated by death. In this class of diseases we may include cerebral congestions and hemorrhages, rupture of the heart and aneurismal tumors, pulmonary apoplexy, angina pectoris, etc. Other morbid processes of slow course are likewise frequent in senility, such as paralysis, gastro-intestinal catarrhs, enterocolitis, asthma, bronchitis, pulmonary emphysema, carcinomatous degeneration of the stomach and liver, anemia and senile debility. These are, rapidly sketched, the most ordinary diseases we have observed here.

After what I have said concerning the tendency to disease in the aged, let us pass to the indication of the hygienic methods most necessary for this period of life.

Fresh air is as necessary for the aged as it is for infants, although, for distinct reasons, we are under no great necessity for insisting upon this point here, since the exigencies of the climate and the construction of the houses do not, in general, expose the aged to the respiration of confined air; as is the case in some other countries. Nevertheless it is necessary to make the point and to force it upon the public, especially the masses, that the aged should not sleep with the face and head covered, a thing which we have often observed when the temperature falls somewhat. By this habit they expose themselves to severe ailments, besides obtaining an unrefreshing sleep, and on awakening are weak and depressed for some minutes, as they themselves observe, owing to the lack of oxygenation of the blood during the period of sleep. It is well known that the aged feel the cold much more on account of the loss of the subcutaneous adipose tissue, the lack of which favors the cooling of the periphery of the body. To remedy this, clothing of greater weight should be worn.

Alimentation.—There is no doubt that alimentation is an important point and one with which all hygienists are occupied with justifiable care, since it is the origin of many diseases among the aged, indigestion being the most frequent on account of their liking for the pleasures of the table and the custom of eating too much, so common in modern lands, according to Boy-Tessier.

In discussing this part of our subject, we should call attention to one point in close relation with the digestive functions of the aged. The loss of the teeth, as has been said, is one of the signs that characterizes old age of the individual in this country by an especial predisposition which it is perhaps not necessary to go deeper into here.

Dental caries begins beforehand the destruction of the teeth, anticipating the epoch of their loss. On this account the lack of all or of a great part of the teeth is very common on reaching a certain time near old age. In such cases we warmly counsel, as a sure method of evading gastro-intestinal affections such as gastro-enteritis and enterocolitis so frequent here among the aged, the use of false teeth, as indispensable for mastication, a *sine qua non*, that the digestion may easily and completely be carried out. On the other hand, and without the aid of this artifice so highly perfected, the food passes to the stomach in pieces practically entire or scarcely changed, a form unsuitable for the efficacious action of the gastric or intestinal juices.

Taking into consideration the quality of the food ordinarily consumed in this country by the great mass of the people, and the simple preparation given it, and especially the natural abstinence of the Filipinos, it would be useless to discuss in an extended manner methods of preventing the excesses at table as frequent as they are dangerous for the aged in other countries. On account of other customs observed here, however, it is necessary, on the other hand, to call attention to and explain the fact that the aged, not in any wise being sick, should not observe a diet practically of abstinence, as we are accustomed to observe, under the pretext of debility of the organism. On the contrary, the aged are able to and should partake of everything; meat, fish, eggs, green vegetables, etc., which are necessary to man in his prime. I do not wish to say by this that he should eat as much as the other—by no means. The man of advanced age, without doubt must submit to a different regimen. We should recommend, as a proper method for the alimentation of the senile, that they should abstain from eating abundantly. It is much better to divide up the meals, taking a little each time, but eating with greater frequency. We will not attempt here to point out the food necessary for each man, for the reason that the necessary studies have not been made in this country of the diverse alimentary substances, to determine their proportions in average alimentation, their coefficient of digestibility or the heat produced by a gram of matter. The aged who are not very active should take only such nourishment as is necessary for purposes of repair. To attempt to invigorate an old man, whose forces are already much debilitated, by means of a very nutritious food is not only useless but prejudicial in a high degree. In general, the nourishment of an individual should be in direct relation to his degree of senility, the more advanced his age, and the greater the degree of physical decay encountered, the less the quantity of nourishment. Such foods as are taken should be prepared simply and composed of substances known to be easily and quickly digested.

The use of wines, liquors and spirituous drinks should be prohibited, as well as all stimulants which tend to excite the various functions. Without doubt, if one has been accustomed to drink, it should not be prohibited absolutely and abruptly, but one should proceed with prudence and circumspection, with the end of not producing a radical change in the bodily economy.

Exercise in the open air is very beneficial to the aged, much more so if in adult life they have been accustomed to it or to labors which required the development of much muscular energy. Gardening is a good form, for it not only serves as a distraction, but it must necessarily be carried on in the open air, and at the same time requires light exercise which produces cutaneous transpiration, and accelerates as well the pulmonary respiration, all indispensable functions for the necessary elimination of toxins. It is very clear that these exercises should be moderate and not continuous, according to the energies which are still conserved.

Short baths at the natural temperature of the water are also very beneficial. Also, from time to time, the employment of hot water for the cleaning of the body is very necessary, for the epidermis, which gradually thickens and becomes somewhat hard in the aged, requires softening and maceration for its removal, without which the perfect action of the skin cannot be maintained.

Intellectual labors, which are prolonged and require that the attention be fixed for a long time should be abstained from.

Finally, after sixty years of age, sexual unions are dangerous in general, since this is a well-known cause of grave accidents, and even sudden deaths; wherefore, all kinds of excitement which might tend to provoke them should be avoided.

The mode of bettering the situation of the needy old, who are extremely poor, is to gather them in a house of refuge in an adequate location outside of, but not far from the city. San Juan del Monte has, in our opinion, the best of conditions for this object. But as, according to trustworthy advices, the owners of those lands ask excessive prices, and the purchase of this site is inadmissible, a site for a house of refuge should be obtained in the heights of Santa Mesa. This house should be surrounded by extensive grounds, where the inmates may carry on the cultivation of the land in a small way as a manner of distraction. There should be two pavilions, each one capable of accommodating 150 people, one for women and the other for men, with their necessary outhouses. We shall not burden this paper with the descriptions of them.

The manner of life to be carried on within this establishment should be the object of special regulation, distributing the hours so as to include from two to four for certain bodily exercises, proportionate to the energies and aptitudes of each individual, including reading in the known dialects and certain diversions at fixed hours. The admissions should be made with scrupulous

attention, none being admitted except those actually needy, or who are a burdensome charge upon their relatives, their circumstances being ascertained by a bureau of information, and no attention being paid to any influence that may intervene in their behalf.

Money aid, distributed to them at their homes, as has been carried out in other countries, for the bettering of the condition of these needy ones, has not given good results, since in nearly all cases the persons who surround them obtain the benefit of this pension, thus defeating the end desired and fomenting, perhaps, laziness and vices in those parasites who wish to live at the expense of the "dead wood." The administration of this asylum should be given to a board composed of persons of good repute, selected by competent authority, the Commissioner of Public Health being *ex officio* president, under the authority of the Secretary of the Interior.

After all that has gone before, and not forgetting the high consideration and respect which our ancestors professed toward the aged, we are confident that the collective forces of unselfish men, with the co-operation of the Government that is giving us such unequivocal demonstration of its good intentions, in the very high and difficult mission which it is carrying out in these isolated regions, will quickly raise a welcome roof to those who, conquered and overcome in the struggle for life, and who are surrounded with misery and privations as the only trophies of their long journey. If we will do this, coming generations will say of us, "Those who preceded us were not selfish. They cared for their unfortunate fellows."

THE SUBSTITUTION OF DRUGS IN THE DISPENSING OF THE PHYSICIAN'S PRESCRIPTION.[1]

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THE substitution of drugs in the dispensing of the physician's prescription is an atrocious crime. Like the work of the assassin, it is a stab in the dark. Under some circumstances it may resolve itself into a criminal act, the legal proof of which may become very difficult. The physical properties and general appearance of a given mixture or other preparation may give no clue whatever as to the chemical character of its component parts. It is true that in doubtful cases resort may be had to chemical analysis, but even that expedient may fail of legal proof. Even if absolutely reliable in every instance, the most ordinary and simple chemical analysis is usually a more or less expensive proceeding, far beyond the means of the average citizen, and is practically impossible unless it be in specific instances where such analysis becomes imperative for medicolegal purposes.

[1] Some remarks on the general subject, together with an examination of a legal opinion handed down by the Hon. William J. Gaynor, one of the Justices of the Supreme Court of the State of New York, in the case of Laturen vs. The Bolton Drug Company.

It will therefore be seen from the foregoing that for safety, accuracy, and skill, in the preparation of the physician's order for his patient, the pharmaceutical integrity of the druggist must be relied upon absolutely. He should therefore be held to the strictest accountability for his conduct toward the public. In the majority of instances the integrity of the pharmacist is all that could be desired, but every physician of experience knows that there are exceptions to this rule —that there are many pharmacists who are in the habit of substituting drugs in the preparation of physicians' prescriptions whenever it may be convenient to themselves to resort to this contemptible practice. The person who is guilty of such an act may be said to descend to the lowest level of mankind. We can understand and overlook, to some extent at least, the crimes of passion. "We take into consideration the fact that man is liable to be caught by the whirlwind, and that from a brain on fire the soul rushes to a crime." But what excuse can ingenuity offer for this deliberate and cowardly crime of drug substitution? The pharmacist, by reason of necessity, occupies a close position of trust toward the helpless poor, the sick, the physically weak, the dying—in fact, to the whole community. The act of substituting drugs in the dispensing of the physician's prescription prostitutes that function and places in jeopardy the health and sometimes the lives of our citizens, and this, too, for a mere trifle in the form of fraudulent monetary consideration or, as is frequently the case, the crime is committed in a spirit of reckless and total disregard for moral obligation.

Against this crime of drug substitution the victim has no redress unless it be through an appeal for the protection of the strong arm of the law. But the mere placing of protective laws upon our statute books will not suffice, if our courts shall fail to recognize the great necessity of constantly and jealously guarding the physician's prescription against the smallest possible intrusion by the druggist.

Laxity in construing the laws on this subject, by our judges, or any judicial disregard for the equitable rights of the citizen in this respect, and the crime of drug substitution becomes rampant. The spirit of commercialism, with its avarice and individual greed, seems to have so thoroughly infected our so-called modern civilization that even the atmosphere of the sick-room has, in one way or another, become contaminated with it.

We have, unfortunately, long since arrived at a point where the physician's prescription is not exempt. This condition of affairs has been allowed to go too far. It is intolerable. It has become a serious menace to the community. It should be stopped. The medical profession should insist upon the application to this existing condition of the proper remedial agent. If laws have not been enacted which will serve the purpose of protecting the public against this crying evil, the legislature should be appealed to with-

out further delay. If there are laws already on our statute books which sufficiently cover this question, it is the duty of the medical profession through its organized societies to see to it that these laws are properly enforced. The lethargy of our profession in the face of this crime of drug substitution is amazing. If there was any dispute concerning the frequency with which the crime is committed there might be less reason for wonderment at this remarkable conservatism, but every experienced physician and every honest druggist freely admits its great prevalence. I have myself heard pharmacists express the opinion that certain acts of drug substitution were justifiable. Such men have secretly committed the crime so often that they have come to regard it as a trifling matter. They represent a certain type with which physicians are quite familiar. Such men are often loud in their ignorant criticism of the physician's prescription. They are living examples of the truth contained in the ancient adage that fools will venture in where angels fear to tread. From this ignorant spirit of criticism to the dishonest practice of substituting something "just as good" is but a short step.

The reasonableness of this statement may be found in the expressions of triumphant delight together with the evidences of irrational and incoherent thought with which some of the pharmaceutical publications greeted the opinion recently emanating from the Supreme Court of this State in the case of "Laturen vs. The Bolton Drug Company," in which opinion it was held by Mr. Justice Gaynor that to tamper with the physician's prescription is not legally negligent. The fact that the manager of the defendant drug company swore that he had himself dispensed for the plaintiff a four-ounce mixture containing two grains of the acetate of morphine, whereas the physician's prescription called for no morphine at all, was not considered by the learned trial justice sufficient evidence of negligence on the part of the defendant to send the case to a jury, and he therefore dismissed the complaint. But, notwithstanding the opinion of the learned justice in the case referred to, it would seem that the law on the general subject is elementary, clear and well settled to the contrary. The courts of last resort in many of our States have rendered opinions upon this subject which seem to be at variance with that of Mr. Justice Gaynor. The basic propositions of law as set forth by our authorities on medical jurisprudence, are certainly in direct conflict with the learned judicial opinion as handed down in the case at bar.

The following language, abstracted from Sec. 401 of the Penal Code, is very explicit:

"An apothecary, or druggist, or a person employed as clerk or salesman, who in making up any prescription, substitutes a different article for any article prescribed, or puts up a greater or less quantity than that prescribed, is guilty of a misdemeanor."

In an opinion which recently emanated from the Court of Appeals of this State, the learned writer, in referring to a toxicological question, quoted as authority the work on medical jurisprudence of *Peterson and Haines*. It occurred to me, when reading this opinion, that it would be interesting, in connection with the question of drug substitution, to note what these controlling medicolegal authorities say with reference to the legal and moral responsibilities of the pharmacist to the public, in order that I might be enabled thereby to examine in detail Mr. Justice Gaynor's decision with a better understanding of the questions involved. Before proceeding to this detailed examination, I desire therefore to refer my readers to p. 776, Vol. II of this work, from which I quote the following language:

"Drugs and medicines are, in all countries, admitted to be necessary. They are valuable when properly used, but liable to prove injurious, dangerous, or even fatal to health and life when abused or ignorantly used, or when one medicinal substance is substituted for another through ignorance, accident or design. The public is necessarily held to be powerless to protect itself against the dangers attending the preparation, vending and use of drugs, since special training, knowledge and experience, such as the public cannot possess, are necessary to guard against these dangers."—Peterson and Haines.

"In the purchase of drugs the customer must rely upon the druggist to furnish the article called for. He is not held to the rule that he must examine for himself. In the very nature of things the druggist is held to *warrant* that the drugs or medicines he sells are of the character called for."—Jones vs. George, 56th Tex., 149.

"Since the sole object of any law regulating and restricting the practice of pharmacy or the preparation and dispensing or vending of drugs and medicines to the public, or directly or indirectly to persons by whom they are to be used must be the proper protection of health and life, it is evident that the exclusive right conferred upon registered pharmacists is merely a part of the means by which the end in view may be attained, and that the qualifications, duties, obligations and responsibilities imposed upon them in return for that exclusive right constitute the only features of value to the public. All pharmacy laws, therefore, demand that the registered pharmacist shall be educated and trained in such manner that he is competent to perform his duties properly and safely, and that he shall in fact actually perform his duties with a degree of faithfulness and care proportionate to the danger involved."—Peterson and Haines.

"It is the duty of the druggist to know the properties of his drugs and to be able to distinguish them from each other. It is his duty so to qualify himself, or to employ those that are so qualified, to attend to the business of compounding and vending medicines and drugs that one drug may not be sold for another. He cannot

escape responsibility on the pretext that the use of one drug for another was an accidental or innocent mistake. It will not avail him to claim that he had used extraordinary care and diligence in preparing or compounding the medicines as required, etc. He is liable at the suit of the party injured for damages *at the discretion of a jury.*" —Fleet vs. Hollenkemp, 52 Ky., 219.

"Druggists are liable in damages to the party injured for negligence or want of skill in the compounding or sale of medicines. Druggists, apothecaries and all persons engaged in giving, compounding or vending drugs and medicines should not only be required to be skilful, but should also be exceedingly cautious and prudent. All persons who deal with deadly poisons and noxious and dangerous substances are held to a direct accountability. A druggist is held to a special degree of responsibility. The care required must be commensurate with the danger involved, and the skill to be exercised must correspond with that superior knowledge which the law requires. If in compounding a medicine, the druggist grinds the different articles of which it is composed without properly cleansing the mill, he is liable for the injury caused thereby."—Fleet vs. Hollenkemp, 52 Ky., 219.

"If the pharmacist sells or dispenses morphine or strychnine, when quinine is called for, he cannot escape responsibility for consequent disaster on the plea that he had received it labeled 'quinine,' that he believed it to be just what the label indicated and had no reason to believe otherwise. Courts have decided that it is his duty to subject the medicines he dispenses to proper tests and to detect mistakes and frauds. If the attending physician in a critical case decides that the only means by which he might be able to save the patient's life is the immediate administration of as large a dose as may be given of an extremely potent well-known remedy, then the patient's life may be lost if the pharmacist dispenses an article of twice the prescribed strength or one which has become wholly inert." —Peterson and Haines.

Having called attention to the general proposition that it is the law's intention to protect the public against any intrusion upon the physician's prescription by the druggist, and also that such protection under the present existing conditions is absolutely necessary in order that the health of our citizens may not suffer in consequence of drug substitution, we come now to the consideration of the specific opinion handed down by Mr. Justice Gaynor in denying the motion for a new trial in the civil action of "Laturen *vs.* Bolton Drug Company," and to which I have referred in previous contributions when considering the merits of this case. The learned justice in this opinion says:

" . . . the pharmacist saw that it (referring to the prescription) only called for a patent medicine put up and sold in bottles by Merrell (at Cincinnati). It did not call for an original bottle of the medicine, but for a smaller quantity in a four-ounce vial."

Thus the impression is given by the learned court that the preparation prescribed is a quack nostrum, such as is sold in most of the drug stores, over the counter, whereas the real truth is that the preparation prescribed, namely, *Elixir Pinus Comp. Cum Heroin* (Merrill's), is one the full formula of which is printed on each label.

This fact alone removes it from the list of secret and so-called patent medicines, and places it among the list of strictly ethical, pharmaceutical products, such as those manufactured by Squibb, Schieffelin, Sharp & Dohme, Parke, Davis & Co., and a host of others. The preparation in question is no more a patent medicine, in the general acceptation of the term, than is Squibb's diarrhœa mixture, or is the compound cathartic pill of the United States Pharmacopœia. Under no circumstances whatever is it possible that any but physicians can utilize it. The public can no more adapt this preparation to its own use, without proper medical advice, than it can use Basham's Mixture, Donovan's Solution or chloroform. The public would not know what to do with it.

The W. S. Merrell Chemical Company, who manufacture this preparation, is a chemical house of many years' standing (since 1830) and known only to the professions of pharmacy and medicine. Its pharmaceutical preparations and chemical products are not therefore patent medicines, as the learned Trial Justice would have us believe. The Merrells are manufacturers of pharmaceutical and chemical preparations, the integrity of which is beyond question, and the use of which is entirely in the hands of the physician and the pharmacist.

The following quotation from the first page of their catalogue is quoted in support of this statement: "The preparations of this company meet the requirements of the kindred professions of medicine and pharmacy. They are not adapted to popular use nor are they supplied to the general public under *any circumstances.*"

In reference to this question of so-called patent preparations, I might add in passing, however, that the chief point in regard to trade-marks and patents on pharmaceutical preparations is that there is nothing objectionable to either of these, provided always that the composition of the substance or mixture is known. This is the attitude, in reference to this matter, taken by the Council of Pharmacy and Chemistry of the American Medical Association.

Referring to the next sentence in the learned opinion, I regret to be obliged to confess that the preparation, being a liquid, *is "put up and sold in bottles."* I recognize that this putting of liquids in bottles, on the part of the manufacturer, *is* a grievous error. In order to please the learned Justice the liquid preparation should be put up in pasteboard boxes or in paper bags. In order to meet the requirements of the opinion I

should myself confess to a very serious oversight in writing the prescription in that I did not order an original bottle of the preparation. *"Elixir Pinus Comp. Cum Heroin"* is shipped to the pharmacist in pint bottles, in half-gallon bottles, and also in five-pint bottles. As I am not practising veterinary medicine I did not prescribe an original bottle of the mixture, neither did I order it to be used for ablutionary purposes.

Another point which seems worthy of passing comment—the prescription did not call for *"a small quantity in a four-ounce vial,"* as the learned justice states in his opinion. It distinctly called for four ounces of the mixture. I did not specify in my prescription the size of the bottle in which the medicine was to be dispensed, neither did I object to the size of the bottle. My objections and criticisms were limited to the mixture which the pharmacist put in it. There is considerable difference between a prescription which calls for four ounces of a given mixture and one which calls for "a small quantity in a four-ounce vial."

This latter statement by the learned Trial Justice is a fair sample of the accuracy with which he handled the whole question. In dealing with the subject of the dispensing and the administration of poisonous drugs slipshod and inaccurate statements should not be tolerated by the public, even when they emanate from so renowned a toxicological authority as is Mr. Justice Gaynor.

But let us proceed to the next sentence contained in the opinion: "There was a bottle in stock, the printed label thereon bearing the name of 'Elixir Pinus Compositus' which the prescription called for, that being the name under which the medicine was advertised and sold."

This is also an improper statement of the fact. The prescription *did not* call for "Elixir Pinus Compositus" any more than it called for calomel. The prescription called for *"Elixir Pinus Compositus Cum Heroin"* (*Merrell's*), which is a separate and distinct preparation differing from every other known preparation. This fact cannot be altered by egotistic judicial expression together with the irrelevant juggling of words. The prescription speaks for itself.

The learned Court says further, when referring to the preparation, *"that being the name under which it is advertised and sold."* Here again the suggestion is conveyed to the public that the preparation in question is an *advertised* quack nostrum, the truth being that the medicine is simply listed with hundreds of other pharmaceutical preparations on the catalogue containing the names of the manufacturer's products. It is possible that the medical journals may mention the article, but beyond this it is not advertised in any way.

"But the pharmacist saw that the doctor's prescription had after the name of the said Elixir (as we have seen) the additional two words *'Cum Heroin,'* which is Latin for 'with Heroin.' These two words were not on the label of the bottle. The pharmacist therefore looked into the pamphlet advertisement of Merrell's patent medicines which he had in the store, and found that Merrell also put up the said 'Elixir Pinus Compositus' in the same bottle with the additional two words under it on the label 'with Heroin,' not 'Cum Heroin.'"

Having seen these two words the pharmacist should have recognized that the Heroin was the all-important ingredient named in the prescription. He must also have known that the Elixir depended upon the Heroin for its principal usefulness to the patient. *Of course* he saw the two words. He could not help seeing them. It was the seeing of them that made him commit the crime of substitution. Had he not seen them there might be some excuse for his action. But having once observed them they told him that Merrell made the specific preparation named in the prescription, and not having it in his store he went deliberately to work to manufacture a substitute. *He did not* look into the catalogue of Merrell's goods, as the learned Justice has stated. That is precisely what he did *not* do. I know this to be true because in a conversation which I had with him on the telephone on the seventeenth day of April, 1903, just one day after he had dispensed the substituted mixture, he told me distinctly to the contrary of Mr. Justice Gaynor's statement on this point.

The plaintiff's counsel at the trial of the case attempted to introduce in evidence this telephonic conversation, but it was excluded by the learned Justice on technical grounds. Learned counsel whose opinion I have sought on the question of the admissibility of this testimony, have informed me that it is, in their opinion, clearly admissible.

If the pharmacist had consulted Merrell's catalogue for the purpose of examining the formula of the prescribed preparation, before dispensing the prescription, why did he add one-twelfth of a grain of Heroin to each dose instead of one-twenty-fourth of a grain, which amount of Heroin the formula shows that the mixture should contain? The real truth concerning the amount of Heroin which was administered to the plaintiff is contained in the telephonic conversation previously referred to, which conversation in the interests of equity and justice should have been admitted in evidence.

A careful, impartial and equitable trial of this case will disclose the fact beyond any question that twice as much Heroin as was ordered for this plaintiff, together with one-sixteenth of a grain of the acetate of morphine, which was not ordered, was administered to her with each dose of the substituted preparation.

The learned Justice, in his opinion, further says: "The pharmacist, therefore, in order to fill the requirement of the words 'Cum Heroin' in the doctor's prescription, added the said one-twenty-fourth of a grain of Heroin to each dose and thereby literally filled the prescription, which as we have seen called for 'Elixir Pinus Com-

positus' with the added two words 'Cum Heroin' (with Heroin). There was plainly no negligence in this."

Thus, with one "fell swoop" does the learned Justice shatter to the ground the fundamental principle of pharmaceutical training and knowledge.

Let us see for a moment where pharmaceutical action based upon the decision of the learned Judge on this point will carry us. Suppose that the druggist receives a prescription for Syrupus Hypophosphatum Cum Ferro U.S.P. Does the mere addition of iron to the Syrup of Hypophosphites, that is, the throwing of them together as was done by the defendant in the dispensing of the prescription for this plaintiff, constitute the proper dispensing of the prescription, under the law? If he is not held to some rule, what form of iron will the druggist use? How will he mix it with the Syrup of Hypophosphites? What will be his "modus operandi"? Will the iron used be a soluble salt of the metal or will it be the reduced iron? Under the decision of Mr. Justice Gaynor the mere mixing of iron, *in any form,* and Syrup of Hypophosphites together, is all that is necessary to fill the prescription. No skill whatever is required in the manufacture of the preparation, and no art is necessary in putting the ingredients together. Should the prescription happen to call for "Hydrargyrum Cum Cretæ" (mercury with chalk), the same ridiculous rule, under this opinion, would apply. Throw the mercury and chalk together in any careless and unscientific manner which may happen to suit the convenience of the dispenser, and the prescription may be said to be properly filled. But every druggist and every physician recognizes with a single glance at the prescription that it calls for a specific and intricately prepared article, which must be manufactured according to certain well-defined rules—those of the pharmacopœia. So also the prescription which was written for this plaintiff called for a specific article which must be manufactured in a definite and technical manner in order that it may bring about proper pharmaceutical, chemical and therapeutic results.

It would be interesting in this connection to know what preparation of Heroin the druggist really used in filling the prescription for the plaintiff. No one but himself knows, and he swore that he dispensed Heroin proper. The formula calls for the hydrochloride of Heroin, but under the decision of the learned Court the druggist *"literally filled the prescription"* and was therefore not negligent under the law. The mere fact that he may have dispensed Heroin when the formula called for the hydrochloride of that drug, is a matter of no consequence. The prescription read "Cum Heroin," or "with Heroin," and under the decision of Mr. Justice Gavnor it was properly filled.

The next sentence contained in the opinion is thoroughly worthy of the immortal Captain Bunsby, and is therefore filled with wisdom—"The bearings of this observation lays in the application on it." It reads as follows: "The prescription was none too careful; it did not even correctly follow the words of the label of the patent medicine bottle it was to be filled from, but it was intelligently read and filled."

Thus does the learned Justice deliver himself on the subject of prescription writing. Is it not remarkable that at the trial of the case, when the prescription was introduced in evidence, that no fault was found concerning the manner in which it was written?

The prescription was identified by the defendant company's manager, Mr. Wilson, who had himself dispensed it, and it was read by him in open court without the slightest difficulty or criticism. There was at that time no suggestion made by the defendant that the phraseology of the prescription was unusual, iregular, ambiguous or illegible. Mr. Wilson testified simply that upon receiving the prescription he read it and at once recognized that he did not have in stock the preparation which it called for, and also that after communicating with the defendant company's main store by telephone and having been informed that they did not have it there, he took it upon himself to put together what *he thought would be a perfectly safe dose for administration to the plaintiff.*

It was not until some time after my article entitled "Is Substitution Legalized?" had been published in the MEDICAL NEWS that it was discovered by the learned Trial Justice that the prescription was *"none too careful."*

To discuss the further criticism of the learned Court as expressed in the sentence "*It* (meaning the prescription) *did not even correctly follow the words of the label of the patent medicine bottle it was to be filled from,"* is simply to expose the utter ignorance of the trial Justice concerning the whole subject of practical pharmacy, together with prescription writing and dispensing.

But a few moments devoted to this subject may be the means of adding information where it seems to be sadly needed. The criticism of the learned Justice concerning the lack of care on the part of the physician in writing the prescription is based entirely on the fact that the word "Cum" Heroin was used in writing the prescription instead the word "with" Heroin. The reason which he assigns for this criticism is that the word "with" instead of "Cum" is found printed on the label of the shop bottle containing the prescribed preparation and that therefore the prescriber *"did not even correctly follow the words of the label, etc., etc."* This criticism is just one more evidence of the fact that the learned Justice seems to be attempting to write a legal opinion on a subject concerning which he apparently knows little or nothing, and also concerning which subject he does not seem desirous of properly informing himself. A reference to almost any authority on prescription writing

would have taught him that there are but two corect methods of writing prescriptions by English-speaking physicians. They must designate the ingredients ordered in the prescription in either Latin or English, but which ever of these languages is selected by the prescriber he is not justified in mixing the two together when indicating the ingredients wanted, any more than a lawyer, practising his profession in the city of New York, would be justified in serving a summons which was printed or written partly in French and partly in English or Russian. There are, therefore, two ways in which the prescription in question can properly be written. The first is as follows:

Elixir Pinus Compositus Cum
Heroin (Merrell's)..... ℥iv

and the second:

Compound Elixir of Pine with Heroin (Merrell's) four ounces.

Either of the above methods is correct, and the the first is that which was selected by the prescriber of the medicine for the relief of the plaintiff in this action. If the prescription is written in Latin the word "cum" is used. If written in English the English word "with" is substituted.

Moreover, prescriptions are not written with the intention that they shall follow the shop label. It is a matter of no consequence to the prescriber or to the consumer what may be printed on the label of the receptacle in which the druggist keeps his castor oil, provided always that castor oil is dispensed when it is ordered. The druggist may keep it in a bottle or other receptacle which is labeled Oleum Ricini, Oleum Palma Christi, Ricinüsol, Olei Ricini Communis, or just plain Castor Oil. Any and all of these methods of designating castor oil are perfectly correct, and the druggist must dispense castor oil and nothing else when either of the above methods of prescribing the article is used by the physician. If the pharmacist is not familiar with these names he must become familiar with them. To be so is a part of his duty as a pharmacist. To say of the physician that he is negligent in writing a prescription because he does not follow the shop label is absurd.

Suppose a physician writes a prescription for "Tinctura Cinchonæ Composita" and the pharmacist fills the prescription from a bottle which bears the label "Huxham's Tincture," is the physician to be held in error because he did not follow the shop label in writing his prescription?

Or, again, paregoric is prescribed in the following words, "Tincture Opii Camphorata," and the druggist dispenses the prescription from a bottle which is labeled "Tinctura Camphoræ Composita," is either the prescriber or dispenser to be criticised for not having followed the shop label, provided always that paregoric is dispensed? But the learned Trial Justice says *"the prescription was none too careful, because it did not follow the shop label."*

I am almost persuaded, even thus early in this detailed examination, that the learned Court has forgotten some of its early medical training. *"But the prescription was intelligently read and filled,"* is the learned Jurist's next sentence. If the prescription was intelligently read, why did not the pharmacist dispense it exactly as it was written? There was absolutely no reason why he should not do so, except that, according to his sworn testimony, he did not have in his store what the prescription called for. How does it happen that he was enabled to dispense it properly, and exactly as it was written, immediately after his act of substitution had been discovered? There was no trouble at that time for him to obtain the proper preparation from a neighboring druggist, and to dispense it. After his substituted mixture had caused the plaintiff to suffer from opium poisoning and he was caught like a thief, "with the goods on him," there was no trouble for him to obtain the proper preparation.

Why did he not take the trouble to send to his neighbor in order to obtain the mixture in the first place? It was because he thought he could substitute without being found out.

And so the prescription was *"intelligently filled"!!*

Is it pharmaceutical intelligence to dispense twice as much heroin in a given mixture as is prescribed by the physician? Is it pharmaceutical intelligence to dispense two grains of the acetate of morphine in a four ounce mixture when no morphine is prescribed?

If this dispensed mixture had been given to a child, it might have killed it.

Is this sort of dispensing of drugs on the physician's order of the character which may be called, by the Supreme Court of this State, intelligent dispensing?

Is the throwing together for human consumption, of drugs, in this reckless manner, worthy to be called, by legal authority, intelligent pharmacy?

If so, then let us do away with our colleges devoted to pharmaceutical education and training. Let us get rid of our pharmacy laws. They are mere hindrances to the advancement of pharmaceutical science. They are jeopardizing the public welfare. Let us have all of our prescriptions dispensed in the manner in which Mr. Justice Gaynor is pleased to call intelligent.

"It is claimed, however," says the learned opinion, "that there was a negligent oversight by the pharmacist in that he left in one ingredient too many. The pharmacist properly added $^1/_{24}$th of a grain of Heroin for each dose, but it was claimed that he negligently left in $^1/_{16}$th of a grain of morphine acetate for each dose. And that came about as follows."

There is no process of reasoning, neither is there any explanation by which it can be morally or legally asserted or proved that the druggist acted within his proper sphere when he added *any* Heroin whatever to *any* mixture for the purpose

of filling the order of the physician for this plaintiff. The law governing pharmacists is very explicit on this point. The prescription called for a specific preparation made by Merrell, of Cincinnati, and not made by the Bolton Drug Co., and it was the duty of the pharmacist to dispense that preparation and nothing else. The law does not give him the right to tamper or substitute. Moreover, it is a matter of no consequence in what manner the defendant "left in" one-sixteenth of a grain of morphine acetate in the substituted mixture. The question to be considered here is simply, Did he dispense a mixture containing the acetate of morphine when no acetate of morphine was prescribed? If he did, he was guilty of negligence under the law, and it is for a jury to say what, if any, damage was sustained by the plaintiff. Juggling with words and multiplying explanations do not alter the real facts.

The opinion continues in the following language: "The question therefore arose whether if it be conceded that there was a negligent oversight by the pharmacist, the plaintiff could have been poisoned by it. Heroin is a preparation of morphine, as is also morphine acetate, so that the two together in the prescription made more morphine to the dose than if the one-twenty-fourth of a grain of Heroin only had been in it. But the uncontradicted exidence in the case is that both combined would make only one-tenth of a grain of morphine to the dose."

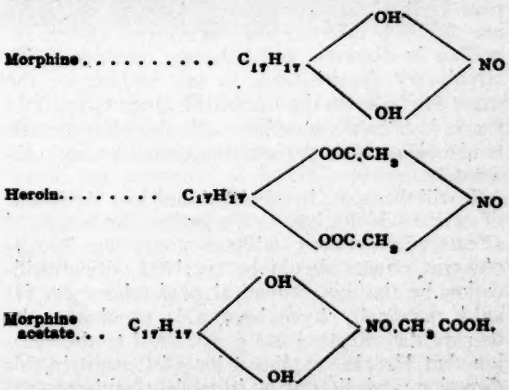
Nothing could be more foolish than this. The idea of adding one-twenty-fourth of a grain of Heroin together with one-sixteenth of a grain of morphine acetate and designating the result as one-tenth of a grain of morphine is absurd. It is just as unreasonable a proposition as it would be to suggest the adding together of one-twenty-fourth of a grain of common salt and one-sixteenth of a grain of cane sugar and referring to the result as one-tenth of a grain of sugar, or an equal quantity of salt.

Heroin is a *derivative* of morphine—not a *preparation* of that drug. It is abstracted from morphine just as phenacetin is derived from coal—by chemical process. But no sane person would think of adding together one grain of coal and one grain of phenacetin, and designating the result as two grains of coal.

Suppose, for example, that the pharmacist, whose testimony was guiding to the learned court in the trial of this action, were to receive a prescription calling for salicylic acid and, further, that he found on investigation that he did not have in stock the requisite amount of salicylic acid with which to fill the prescription, would he be justified in adding to the quantity of salicylic acid which he had on hand a sufficient quantity of carbolic acid to make up the deficiency? Certainly not. And why? Because of the decided difference in the two drugs. Carbolic acid is a deadly poison and salicylic acid, although made directly from carbolic acid, is a comparatively harmless drug, which is used in large quantities for human consumption. Yet, if the reasoning of Mr. Justice Gaynor be followed, in dispensing prescriptions, the pharmacist would be perfectly right in doing so, because carbolic acid and salicylic acid are both preparations, or derivatives of the same substance, namely, coal.

Again, would the pharmacist add one-twenty-fourth of a grain of heroin and one-sixteenth of a grain of apomorphine together and give as the result of such addition one-tenth of a grain of morphine? Of course not. Yet both of these drugs are derived from morphine. They differ very materially, however, in their chemical properties and physiological action, apomorphine being a very powerful emetic, whereas heroin is a respiratory tonic and pain reliever.

Referring to the chemistry of the subject, nothing can be more ridiculous than the assumption of the learned Justice that morphine and heroin are practically identical. While it is true that heroin is derived from morphine, the latter drug has been so modified in the process of its manufacture as to constitute an entirely different chemical body exhibiting distinct and separate physiological properties not possessed by morphine, such, for example, as the specific effect of heroin upon the respiratory organs, together with its freedom from the general narcotic effects which are characteristic of the action of morphine. There is a wide difference between a mere salt of morphine such as the sulphate, acetate, or the hydrochlorate, and a substitution product of morphine, such as heroin. Codeine, for example, is methyl morphine, that is, morphine in which an atom of hydrogen has been *replaced* by the methyl group CH_3. This chemical replacement is what constitutes the difference in chemistry between a preparation and a derivative. In heroin the two hydroxyl groups of morphine have been replaced by acetyl groups (CH_3COO), giving it an entirely different formula, as follows:



A comparison of these formulæ will dispose of the question as to whether from the standpoint of the chemist, these drugs may be assumed to

be identical and will show also the absolute absurdity of such a proposition.

The difference in the physiological and therapeutic effects of Morphine (and its salts) and those of Heroin is very marked. The diaceticacid-Ester of morphine (Heroin) was introduced into therapeutics by the Farbenfabriken of Elberfeld in Germany. This establishment is the largest and most complete of its kind in the world. It has produced many of the most modern medicinal therapeutic agents known to the medical profession, and its reputation for scientific accuracy and integrity in the manufacture of chemical and pharmaceutical products is world-wide. Its methods of experimentation are conducted along physiological lines by some of the ablest physiological chemists known to science. Its laboratories have given to the medical world hundreds of drugs which have proved of great therapeutic value, and many of the standard text-books on therapeutics have included some of these drugs in their lists of medicinal therapeutic agents. Among these may be mentioned phenacetin, protargol, sulfonal, veronal, trional, aspirin, europhen, heroin, and a host of others. I have observed that one of the aims of this establishment seems to be to rid many of the drugs included in our materia medica of their unreliability of therapeutic action by producing absolutely pure chemical products or derivatives of those drugs, and in this way placing many of our modern medicinal therapeutic agents on a much more scientific basis than they have ever attained before in the history of medicine. For example, every physician admits the great power for good of Opium and its chief active principle—morphine. But medical men also acknowledge the ill effects which follow the administration in its ordinary forms, of this drug. The physician prescribes and administers it hypodermically, for the relief of pain, with reluctance, because he is well aware that its administration is liable to be followed by unpleasant symptoms such as nausea and constipation, together with a locking up of nearly all of the normal secretions. Then there are the toxic effects upon the nervous system resulting in dizziness and lethargy, combined with circulatory disturbances, to say nothing of the great tendency in the use of this drug to produce the opium habit, together with the idiosyncratic tendencies which *prevent* its administration, absolutely.

It will therefore be admitted that any derivitive of opium which gives to the patient the beneficial effects of this drug without producing its unpleasant effects should be received with gratification by the entire medical profession. So far as I personally have been able to observe its therapeutic effects, I am constrained to the opinion that Heroin supplies a long-felt want in this direction and literature is replete with reports from the medical world which seem to confirm these observations. Its therapeutic action has been shown to be very different from that of morphine and its salts. This question is so well settled as to admit of no further discussion.

Experiments on animals, which have been conducted by Professor H. Dreser, of Germany, have clearly demonstrated that heroin and morphine have entirely different actions upon the respiratory tract. Heroin diminishes the number of respirations and increases the volume of inspired air; italso increases the force and length of inspiration. In the words of Professor Leo (*Deutsche medicinische Wochenshrift*, March 23, 1899) it is therefore a true respiratory tonic analogous in its action to that of digitalis upon the heart. While it quiets cough, through its sedative action upon the sensory nerves of the bronchial mucous membrane, it does not diminish the excitability of the respiratory centers to the normal stimulus (carbonic acid gas).

On the other hand, the influence of morphine in slowing the respiration is due to the fact that it dulls the sensibility of the respiratory centers. Heroin, on the contrary, stimulates the respiratory centers, and thereby increases the force of the respiration.

In an article on the therapeutics of heroin by Dr. Eugene Meda (*Charlotte Medical Journal*, January, 1900), the author discusses the effects of heroin on the respiration in the following words: "In regard to the influence of morphine upon respiration we know that this is not exerted for a long time, either in man or in the animals, and when there occurs a modification it consists in a slowing, due to the diminished excitability of the respiratory centers. This slowing, however, is very far from occurring with those characters of regularity, of increase in length of the respiratory movement, and of augmentation of its strength, which are so important in order to prevent a stagnation of the secretions which are obtained with heroin."

It will readily be seen from the foregoing that morphine is a respiratory tonic. In the treatment of acute and chronic inflammatory processes of the pulmonary tissue, together with acute catarrhal inflammations of the bronchial mucous membrane resulting in cough, heroin seems to have almost entirely supplanted opium and morphine. It is administered in the form of the hydrochloride in much smaller doses than morphine is given, and its administration is not attended with any of the narcotic and unpleasant after-effects which usually follow the administration of opium, or any of the salts of morphine. According to the clinical reports of a large number of authors, doses of one-twenty-fourth of a grain of heroin are always tolerated by the stomach and never give rise to nausea or vomiting.

(To be Continued.)

Annual Meeting of the Boston Medical Library.—This was held at the Library, November 14, 1905. Memorial remarks on Dr. James Reed Chadwick were made by Dr. Clarence T. Blake and Dr. T. G. Mumford.

A PHASE OF THE YELLOW PERIL.

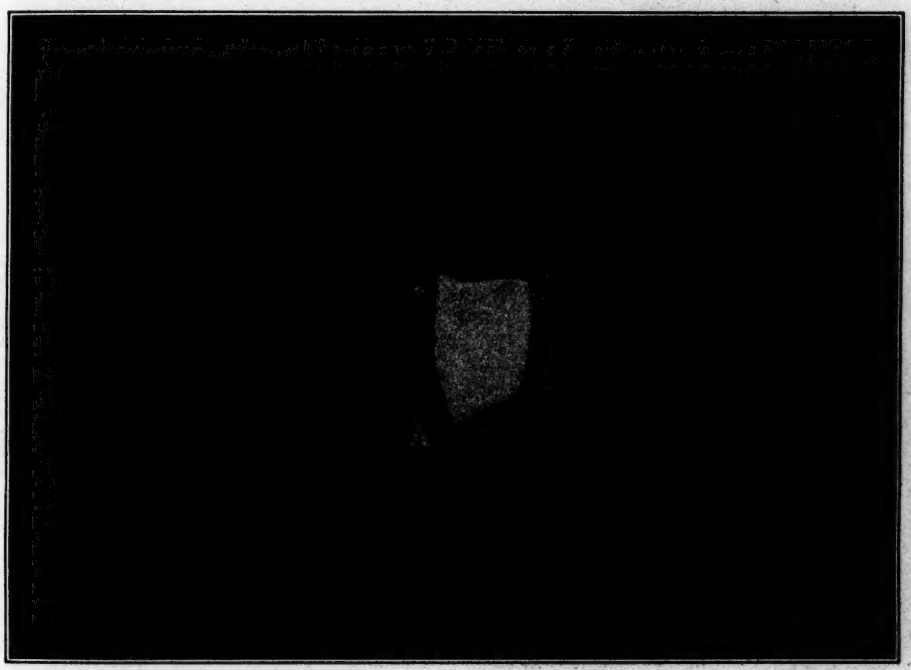
BY L. O'CONNELL, M.D.,
OF WASHINGTON, D C.

ACCORDING to latest advices from Tahiti, Society Islands (per S.S. Maricopa, September 3), officials of the French government at Papeete are discussing negotiations said to be in progress between the State Department at Washington and the authorities at Paris, relative to the transfer of the Society Islands to the United States for certain considerations not yet made public. With the cutting of the Isthmus of Panama and consequent opening of a new waterway to the Pacific, rearrangement of American-Oriental traffic is a foregone conclusion. Obliquely across the South Seas from Panama to Australia lies the Polynesian Archipelago, whose central point is Tahiti. In the new order of trade Tahiti will be the best coaling station for the Navy and for the Merchant Marine between Atlantic ports and Australia.

Outside of possible value as a coaling station, what does the United States gain by acquisition of the Society Group?

Though for a limited time the white man may, with care, endure heat and humidity at 18° below the Equator, he cannot labor mentally or physically within the lines of Cancer and Capricorn. Our statesmen may legislate with certainty on the basis that the tropics never can be brought under conditions of active life for white races. To the Society Islands, since they were brought into contact with the outer world by the reports of the great navigator, Cook, in 1769, Europe has sent measles and smallpox; Asia, leprosy, the plague and elephantiasis. The French Academy of Medicine having declared leprosy non-transferable, lepers roam freely over the islands, uncontrolled by law or medicine. In the chief town, the seat of the French government, the poor victims scratch themselves by the roadsides, or,—horrible things of rags and sores, with loose lower jaws fretted to dislocation by disease, pluck at their lidless eyes, and make hideous croaks and clatters as they caper on the mountain sides, hopping and halting like birds of prey.

Fig. 1.



Lepers in Tahiti.

Elephantiasis, that fearful, incurable disease of the equatorial zone, well known to be produced by a germ that propagates with incredible speed in human secretions, is specially prevalent in the humidity of Eimeo, the second in size of the Society Islands, lying ten miles from Tahiti. In Eimeo elephantiasis affects two per cent. of the population of fifteen hundred persons. Contagion is inevitable, owing to native habits and lack of any sanitary conveniences for natural relief. Thus the soil becomes permeated with urine and fecal refuse, and all who walk through the saturated grass fall victims to the disease.

Elephantiasis, to which whites are even more susceptible than the native races, progresses swiftly, swelling the limbs or other affected parts

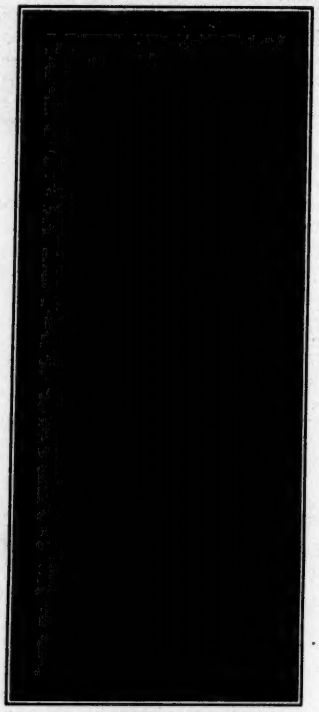


Fig. 2.—Elephantiasis in Eimeo (Society Islands).

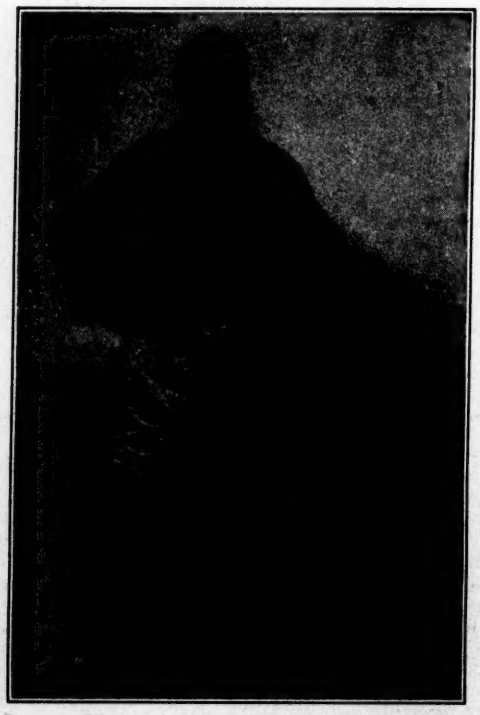


Fig. 3.—Elephantiasis in final stage in one arm. Developing in other extremities.

to enormous size in two to four months after first contagion. Relief from the tension and weight of the swellings can be gained only by amputation of the mass, which on being removed is found full of tiny cells charged with clear liquid; apparently a form of dropsy. Many cases exist among the white men who have for various reasons made the islands their home, trading in copra or employed by the French government. Since the increased traffic with the Far East, consequent on the acquisition of the Philippines, a number of cases of elephantiasis have been observed in San Francisco. The patients probably arrived in this country in the early stages of the disease when concealment was possible.

The question now is: Do we want these far-away isles with their hybrid inhabitants, full of strange superstitions and afflicted with weird Asiatic maladies,—diseases until now unknown in our young, clean civilization?

MEDICAL PROGRESS.

MEDICINE.

The Musical Heart Case.—J. M. PATTON (*Journal A. M. A.*, September 30) gives an account of the well-known musical heart case so familiar to medical clinics and mentioned in the lay press of late years. The special peculiarity was a distinct musical note occurring with the cardiac systolic and heard all over the precordial area with varying intensity, but plainest from the second rib to the fifth interspace along the left parasternal line. The diagnosis made when first seen was double aortic and double mitral lesions with the musical notes originating in the left ventricle and probably due to some abnormal condition of the chordæ tendinæ. The patient was observed by Patton at intervals for twelve years. The musical sound disappeared during the last few months of life. The autopsy bore out the diagnosis and Patton considers it probable that the musical sound was attributable to the thickened chordæ tendinæ, which were found broken and floating loosely in the ventricular cavity. This, he thinks, will account for the sudden disappearance of the murmur during life. The greater tension on these cords during systole, which would be the result of their thickening, might easily produce in cords of such length the high-pitched and sustained musical note that was heard. If musical notes require, as here assumed, the rapid vibration of some organized structures of the heart, we must admit they have a different prognosis and a much more serious import than ordinary blowing murmurs. Patton has observed them several times before the fatal termination of severe endocarditis. He, therefore, thinks this case illustrates the fact that they indicate a more serious involvement of cardiac tissues than do the ordinary murmurs.

The Nurse or the Doctor?—ALBERT T. LYTLE (*Am. Med.*, September 30, 1905) states that nursing, prior to 1835, was carried on by religious orders; that the modern idea of trained nurses was evolved from the Kaiserwerth Hospital; that instruction for nurses was systematized by Florence Nightingale about 1853; that in America special training dates from 1863, since when nearly every institution caring for the sick has established some sort of training school, until more than 552 such now exist in the United States. The extensiveness of the movement is evidenced by the formation of local, State, national and international associa-

tions, congresses and the publication of periodicals exclusively for nurses. He says that many nurses receive an education in medicine but little inferior to that given in many medical colleges. The demand for trained nurses has practically increased tenfold in the past ten years, and untrained women are rushing into the profession owing to the pernicious advice of well-meaning friends. Eight States have adopted laws governing the registry of nurses. He prophesies that the effect of competition will be good in that it will drive out of the field fakirs and quacks, the osteopath and a host of frauds, and it will compel the physician to be more careful and to keep abreast of the advances in his profession.

Infection of Chinese with the Asiatic Blood Fluke.—H. G. BEYER (*Am. Med.*, September 30, 1905) says this case is interesting, as it represents the second of the kind recognized from China and, at the same time, establishes a new locality for the parasite to which its further spread and distribution may be traced. Its presence in the Philippines may now be discovered at any time. The report is accompanied by a complete clinical history furnished by Dr. O. T. Logan, of Changteh, China. The identity of the parasite discovered in the present case with the one obtained by Catto from a Chinaman having come from the province of Fukien to Singapore, was easily established by a comparison with one of Catto's original preparations, fortunately in the possession of Dr. Stiles. Perhaps the chief distinguishing characteristics of the egg are its size and the absence of a spine. The average obtained from nine of the eggs is 72 microns in length and 48 in breadth.

Typhoid Fever in the Philippines.—WILLIAM DUFFIELD BELL claims that typhoid fever in the Philippines is easily preventable (*Med. Rec.*, September 30, 1905) where quarantine regulations are enforced. The climate it not an important factor in the development and continuance of the disease. The dry season covering the months of February, March, April and May, reaches a mean temperature of 87°; the rainy season, from June to October has a mean temperature of 84° F.; whereas the cool season, with a temperature of 72°, is the one during which the highest mortality occurs among the natives. The real cause of the widespread prevalence of this disease is the fruitful soil for the propagation of the typhoid germ, which the universal filth that surrounds and permeates the houses of all Filipinos furnishes. Polluted wells and streams supply the potable water, and this, together with contaminated food, constitutes the chief source of infection, whereas milk plays only a minor rôle. In one town where no water was drunk or utilized for washing kitchen utensils that had not been thoroughly boiled, not a case appeared among the garrisoned troops. The course of the disease varies little from that it assumes in the United States. A careful differential diagnosis is necessary to distinguish it from tropical dysentery, malaria, and also from dengue, which in its early stages is often mistaken for typhoid and may even coexist with it. Two forms of fever were observed. One was the primary fever, due to the infection the typhoid germ produced throughout the system, and the other, appearing as the disease progressed, indicated from symptoms such as a dry, brown tongue and wild delirium, a septicemic process.

Epidemic Cerebrospinal Meningitis.—H. SCHOTTMÜLLER (*Münch. med. Woch.*, Nos. 34 to 36) states that not every case of epidemic cerebrospinal meningitis is caused by the meningococcus. The *Streptococcus mucosus* must also be regarded as an aetiological factor, though epidemics are less frequent than with the meningococcus. The lumbar fluid withdrawn from epidemic meningitis cases was usually slightly turbid and soon deposited a greyish sediment; in a few cases a perfectly clear fluid or almost pure puss was obtained. The sediment consisted almost exclusively of polynuclear leucocytes, though some cases were encountered where the lymphocytes predominated. The appearance of the fluid may change from day to day. The number of bacteria found is not in proportion to the appearance of the fluid or the severity of the disease. The cocci have been found as early as the second day of the disease and as late as the fourth week. The best culture medium for the meningococcus is blood agar and a growth could be obtained on this in 43 out of 49 cases. In three instances a mixed infection was present (tubercle bacillus, streptococcus and pneumococcus). The meningococci isolated from different patients were always the same and also preserved their morphological and biological characteristics on artificial media. There are no different varieties of this germ and variations described by different authors are due to contaminations, for in many instances the meningococcus does not grow properly or is rapidly overgrown by saprophytes. The infection probably enters through the nose and is carried to the meninges by way of the lymphatics. The following clinical facts are of importance: About one-half of the patients are children and the disease generally sets in suddenly, without prodromal symptoms. The initial signs are chills, fever, headache, pains in the nape of the neck, vertigo, tinnitus and sometimes vomiting. In children, convulsions are the rule. The symptoms of the illness are generally fully developed during the first twenty-four hours. Three types may be recognized, viz., (1) the foudroyant type, (2) the subacute or acute form and (3) the abortive form. The first form is rare, the last is hardly ever seen in hospitals. The majority of symptoms when the disease is once well developed, arise from the central nervous system. They often vary in intensity from hour to hour and the temperature is also subject to considerable variations. Herpes was seen in 30 per cent. of the cases. A splenic tumor is rare and the blood usually shows a leucocytosis which may reach 65,000. Optic neuritis occurred in only about 18 per cent. Some complications seem to be characteristic for meningococcus meningitis, such as painful effusions into the joints, epididymitis, extreme emaciation and exudative pericarditis. In the fluid from the pericardium the meningococcus can usually be detected. Blood cultures are only rarely positive. The mortality was 50 per cent. The differential diagnosis has to consider typhoid, tetanus, croupous pneumonia, staphylococcus sepsis and the coma of uremia and diabetes. A lumbar puncture will, however, clear the condition in most instances. In tuberculous meningitis, the spinal fluid is as a rule less turbid, the onset is more insidious and other tuberculous foci are generally present. In pneumococcus meningitis the lumbar fluid generally contains many pneumococci in every field of the microscope and cells are very scant while the course is very acute with bad prognosis. Other germs which have been encountered from time to time in the spinal fluid by the author are *Streptococcus erysipelatus*, staphylococci, typhoid and pseudo-influenza bacilli. The only method of treatment which has brought about results is repeated daily lumbar puncture. The outlook for obtaining an immune serum is very poor, since animals are not very susceptible to the meningococcus. Good results may, however, be obtained by using the serum of convalescents, particularly if this is injected directly into the spinal column. In cases where hydrocephalus is suspected, the skull must be trephined.

Treatment of Strychnine Poisoning and Tetanus by Spinal Anesthesia.—It has been shown that under the influence of both strychnine and tetanus toxin the reciprocal inhibition normally produced by an afferent impulse is converted into excitation. A. E. RUSSELL (*Lancet*, September 23, 1905) states that the convulsions produced by strychnine are markedly related to afferent impressions. Thus, in lower animals and man poisoned with strychnine only a very slight stimulus is necessary to evoke a violent spasm. The same condition also obtains in tetanus. It might be hoped, therefore, that if afferent impressions could be prevented from reaching the spinal cord the convulsions might be either prevented or at least diminished. Experimentors have shown that in frogs dipped in a solution of cocaine and in frogs the dorsal spinal roots of which have been divided, no convulsions occurred after the injection of strychnine. Spinal anesthesia produces a temporary physiological section of the posterior roots, and could then conceivably annul the convulsions produced by strychnine. Experimentally this has been shown to be true, which strongly suggests the advisability of its use in man. Since cocaine solutions cannot be boiled and since complete sterilization is of the greatest moment, β eucaine, solutions of which may be sterilized, is preferable. Small doses of either drug should be employed, say two cubic centimeters of a one per cent. solution of cocaine, and one to two cubic centimeters of a three per cent. solution of β eucaine. Since death from strychnine poisoning usually occurs within two hours, treatment must be instigated at once and repeated if convulsions recur. Fortunately strychnine is rapidly eliminated. It is to be remembered that in large doses and in the late stages strychnine may produce a paralysis of the motor nerve endings not unlike curare. Tetanus appears to offer another field for this therapeutic measure. The spasms are presumably due to an excitation of the motor mechanism of the spinal cord, whether, like strychnine, by increasing the sensory irritability, or by directly acting on the motor cells, is not certain. But by inducing anesthesia great relief of pain would be effected. Eucaine and antitetanic serum could be injected together, and the addition of adrenalin might prove a further advantage.

Pneumothorax in Tuberculous Subjects.—Pneumothorax, writes F. PARKES WEBER (*Lancet*, September 16, 1905) has been variously estimated as occurring in from 3½ to 10 per cent. of all cases of phthisis. In by far the majority of cases it is due to pulmonary tuberculosis. Spontaneous pneumothorax may in reality be connected with tuberculosis, in so far as it may be due to the rupture of an adherent emphysematous bulla. The pneumothorax is the direct cause of death in 60 per cent. of cases where it occurs; 80 per cent. of such cases die in less than a year and only 10 per cent. live over five years. Besides being due to ruptured adhesions, it may be the result of scarring or to a counter-infection, producing softening of a subplural tuberculous nodule. The physical signs will depend on whether the pneumothorax is complete or limited. Adhesions in the front of the lung may check the displacement of the heart and mediastinum, which constitutes one of the most important physical signs in cases of complete pneumothorax. In cases where the process is limited, the onset may be overlooked, but in complete cases there is usually urgent distress, dyspnea, sometimes faintness and often severe pain. The initial distress is likely to demand relief by paracentesis. One or more of the best known physical signs, such as amphoric breathing and the bell sound, may be absent. Subphrenic abscess is likely to be mistaken for a limited pneumothorax. In many cases the pneumothorax must be regarded as the terminal stage of the tuberculous disease. Occasionally patients die almost immediately after the onset. A few days after the onset the physical signs show the presence of fluid as well as air in the pleural cavity. The fluid is generally serous at first, and in some cases it never becomes really purulent. The patient's organism succeeds in accommodating itself to the alteration in its respiratory mechanism, so that a kind of accommodation occurs, the extent of which may relatively indicate the prognosis. In most cases the pneumothorax occurs when the tuberculous process is far advanced, but it may occur at any stage, even from a single lesion. In a few cases the condition has disappeared without any effusion of liquid. Emphysema may, in certain cases, be considered the connecting link between tuberculous lesions and pneumothorax. The prognosis as to partial or complete recovery must depend on the extent of the tuberculous disease, the general condition, and on the local and general treatment adopted. The treatment of tuberculous pneumothorax is that of pneumothorax generally, together with the hygienic measures peculiarly suitable for pulmonary tuberculosis. During the onset stimulants may be required for collapse. In some cases sedatives are necessary. Aperients may be serviceable to reduce portal congestion. The patient should be kept as quiet as possible. Inhalations of oxygen may be of temporary use. When there is reason to believe that the distress is due to excessive tension, the air may be allowed to escape. This necessity only arises in a very limited number of cases. Every endeavor must be made to improve the patient's general condition.

Acute Illness Following Inoculation with Antityphoid Vaccine.—The general acceptance of the statement that antityphoid inoculation does no harm except for a certain amount of feverishness and local soreness has induced W. J. LINDSAY (*Lancet*, September 16, 1905) to report the following case. A civil surgeon, aged twenty-nine years, was inoculated in February, 1900, during a voyage to South Africa. Except for local soreness there was no constitutional disturbance. In August, 1900, after a leave of absence spent mostly in London, the patient again sailed for South Africa, and was again inoculated. The injection was made with antiseptic precautions and the dose given was less than the one recommended. Up to the time of inoculation the patient was, and had been for many months, in robust health. Symptoms set in the same evening, beginning with headache. This increased and remained a persistent symptom. Other symptoms present were furred tongue, bad taste, sensation of chilliness, anarexia, loss of energy, hard and quick pulse, insomnia, constipation, and fever ranging as high as 104° F. There was no rash, no cough, no vomiting nor arthritic pains. The illness lasted fourteen days. The local reaction at the point of inoculation was at all times insignificant. Typhoid, atypical typhoid, and toxæmia were discussed as possible diagnoses, the weight of opinion favoring the latter.

Physiology of Kernig's Sign in Cerebrospinal Meningitis.—ROGLET (*These de Paris*, September, 1905) in explaining the phenomena of Kernig's sign, ascribes the hypertony of the flexors in meningitis to irritation of the spinal roots. The muscular hypertony leads to loss of elasticity and, perhaps, to diminution to the length of the muscles. The latter become too short to permit of complete extension of the leg, when the femur is flexed upon the trunk. Finally, Piéry sees in Kernig's sign only a defensive contraction of the flexor muscles of the thigh reacting against the painful elongation of the inflamed nerves of the cauda equina. The elongation of the

nerves occurs when the thigh is forcibly flexed upon the pelvis, the leg being simultaneously extended. On the ground of anatomic physiological data, the following explanation of the pathogenesis of Kernig's sign is given: When the thigh is flexed upon the trunk, and the leg at the same time extended (Kernig's position) the sciatic nerve becomes stretched. Thus in Kernig's sign we have, first of all, to do with the stretching of this nerve. In the healthy state, the stretching of the sciatic nerve seems not to produce any pathological conditions, since Kernig's sign has never been clearly demonstrated in healthy individuals, except when the thigh is flexed upon the trunk at a very sharp angle, *i.e.*, when the sciatic nerve is greatly stretched. In morbid conditions when the nerve itself is affected (neuritis sciatica), or the nerve roots are affected—which undoubtedly takes place in acute meningitis—the stretched affected roots react correspondingly; the posterior roots, by producing pain, which in Kernig's sign is pointed out by the majority of observers, and the motor roots by producing contractions of the corresponding muscles, in the case of the sciatic nerve, the flexor muscles. The pain arising from the stretching of the posterior roots makes the patient instinctively keep away from further stretching of the posterior roots, as it happens, for instance, in dislocations when the muscles respond with strong contraction to any active or passive movements in the dislocated joints, so that this explanation, which may be considered as a combination of Piéry's and Roglet's explanations, may be held, at least, as the simplest one we have for the understanding of the mechanism of Kernig's sign. The occasional occurrence of Kernig's sign in typhoid fever may be explained by the fact that the meninges are frequently affected in typhoid fever, so that the sign is due, not to the fever, but to the concomitant meningitis. The author concludes by stating that Kernig's sign may be considered as a standard sign of inflammatory meningeal lesions, and as being due to iritation of the spinal roots, produced by the stretching of the sciatic nerve.

SURGERY.

Ethyl Chloride as a General Anesthetic.—It is of the utmost importance to note that this drug has now been used in over 100,000 cases without a death, as a means of producing transient anesthesia. It is probably, as observed by Marcus, much superior to gas, if the all-important point of utilizing a rubber bag in connection with the apparatus for giving the drug be observed. J. W. McCARDIE (*Lancet*, October 7, 1905) states that this drug has practically been rediscoveredi. In the year 1847, Flourens observed that it caused the loss of consciousness similar to that induced by sulphuric ether. It was forgotten as a narcotic until ten years ago some Swiss dentists observed that when used locally a general anesthetic effect was produced in one or two instances. The author considers that it is essential to obtain the pure drug. He agrees with Marcus in that a bag should be attached to the inhaler, and states that as the specific vapor is 2.2, it will sink to the bottom of the bag and can be retained there for a long time. The best manner to detect impurities is to smell the fumes just as in the case of chloroform. There should be no disagreeable odor when some is allowed to evaporate from the palm of the hand. As to inhalers, he states that all that is needed is a bag inhaler of wide bore, which can at any time be used for etherization, if the ethyl chloride be unsatisfactory. The author's method of giving it is simply to put three or four cubic centimeters into the bag. Quiet respiration is, in his opinion, the most important point, because it prevents any choking feeling. No air is needed until the patient snores. This avoids the inhalation of respiratory gases and decreases the post-operative headache. The author is explicit in stating that he can find no advantage in the use of the anesthetic called somnoform. He considers it to be less safe than ethyl chloride, because it contains ethyl bromide, and further because the last few doses in the bottle, unless used soon after the first, are likely to decompose and to produce serious effects if inhaled. He states that in all, seven deaths have occurred. Deaths have also occurred under somnoform. From a study of the seven cases, it becomes evident that three of the deaths were due to increase by the drug of swelling about the larynx.

In conclusion, the author states that ethyl chloride occupies a position midway between nitrous oxid and ether. It is more toxic than the former, and when used in proper cases nearly as safe as the latter. Nitrous oxid, as regard to safety, is still in a class by itself. Ethyl chloride should be used rather to replace chloroform and ether in certain cases than as a substitute for nitrous oxid. For short operations, needing complete muscular relaxation, it is of great advantage. In a preliminary to etherization it is unequalled.

Ligature of Almost the Entire Arterial Supply of the Leg.—That common iliac ligation is a relatively frequent operation is not to be denied. Bryant's Operative Surgery states that it has been ligatured sixty-nine times, and no doubt there are very many cases unrecorded. HENRY E. CLARK (*Brit. Med. Jour.*, October 7, 1905) states that in the case of a patient twenty-six years of age, who was stabbed in the side with a small penknife blade, he ligated with perfect recovery the profunda and common femoral arteries and common iliac artery on the same side. On reaching the hospital the patient was found to have a small incised wound directly over the course of the common femoral. The bleeding from the wound, however, had ceased under the application of moderate pressure, and it seemed expedient to leave it to take its own course. Within a few days, however, the patient was suddenly seized with very active hemorrhage from the wound, which necessitated immediate opening and ligation of the vessel. The latter was found to be severed across the main trunk. The vein was also injured, and both vessels were tied. On account of infection in the wound there occurred within a few days a secondary hemorrhage of severe character. This was found on operation to come from the common femoral and it, in turn, was tied. Again, within a few days, a secondary hemorrhage appeared. On this occasion it was found that a tight tourniquet around the hip did not suffice to control the hemorrhage, and the operator was obliged to decide on common iliac ligation. This was done by Crampton's method, whose incision, it will be remembered, begins at the anterior extremity of the last rib, proceeds downward directly to the ilium, follows the line of the crest, and terminates at the anterior superior spine. This incision is carried to the peritoneum, which is reflected in the usual manner. Again there was suppuration, the original focus having been of very violent character, and it was two months and a half before the wounds were entirely healed. This case is probably unique, because it demonstrates that very extensive obliteration of the lower extremity may be brought about without a fatal termination. It further shows, for this man returned to his work as railroad porter and was able to execute it without the slightest inconvenience, that

such obliteration may be practised without necessarily incapacitating the individual.

The Early Diagnosis and Radical Cure of Carcinoma of the Prostate.—H. H. YOUNG (*Bull. of the Johns Hopkins Hosp.*, October, 1905), after a review of ten cases of carcinoma of the prostate operated upon by author, gives a clinical and pathological study of 40 cases of cancer of the prostate, taken from the records of the Johns Hopkins Hospital and from the records of his private cases. He states that the question of cure depends upon early diagnosis. This is often difficult on account of the absence of characteristic symptoms and signs. When severe pain and hematuria are associated with a very hard prostate, with upward prolongation of the induration into the region of the seminal vesicles on each side, the nature of the disease is evident at once. When, however, the symptoms are those of ordinary hypertrophy, and the seminal vesicles and the vesicular region feel normal, the diagnosis is often difficult. After a careful review of these cases I now feel that a markedly indurated prostate producing obstruction in a man over fifty years of age should be viewed with suspicion. If it is of stony hardness it is very apt to be cancerous, especially if the cystoscope shows little or no enlargement intravesically as in the ordinary hypertrophy. In such cases I proceed to expose the posterior surface of the prostate as in the ordinary prostatectomy operations, palpate the prostate directly, and if I find the posterior capsule more adherent to the rectum, the tissues more hemorrhagic and the consistency of the prostate much more indurated than in simple hypertrophy, I am able generally to make the diagnosis of carcinoma without cutting into it, and proceed at once with the radical operation. In a recent case after exposing the prostate I was still uncertain as to malignancy and therefore made a longitudinal incision into the prostate on each side of the urethra as if for the usual prostatic enucleation, and then excised a slice of the lateral lobe parallel to the cut. Microscopic examination showed a definite adenocarcinoma invading the intraglandular stroma. When the presence of cancer is demonstrated the capsular incisions are to be closed at once and the radical operation carried out. The following conclusions may be drawn from this study of 40 cases. Carcinoma of the prostate is more frequent than is usually supposed, occurring in about 10 per cent. of the cases of prostatic enlargement, as shown also by Albarran. It may begin as an isolated nodule in an otherwise benign hypertrophy or a prostatic enlargement which has for many years furnished the symptoms, and signs of benign hypertrophy may suddenly become evidently malignant. Marked induration, if only an intralobar nodule in one or both lobes of the prostate in men past fifty years of age should be viewed with suspicion, especially if the cystoscope shows little intravesicular prostatic outgrowth, and pain and tenderness are present. The posterior surface of the prostate should be exposed as for an ordinary prostatectomy, and if the operator is unable to make a positive diagnosis of malignancy, longitudinal incisions should be made on each side of the urethra (as in prostatectomy) and a piece of tissue excised for frozen sections, which can be prepared in about six minutes and examined by the operator at once. If the disease is malignant the incisions may be cauterized and closed and the radical operation performed. Cancer of the prostate remains for a long time within the confines of the lobes, the urethra, bladder and especially the posterior capsule of the prostate resting inviolate for a considerable period. Extraprostatic invasion nearly always occurs first along the ejactulatory ducts into the space immediately above the prostate between the seminal vesicles and the bladder and beneath the fascia of Denonvilliers. Thence the disease gradually invades the inferior surface of the trigone and the lymphatics leaving to the lateral walls of the pelvis, but involvement of the pelvic glands occurs late, and often the disease metastasises into the osseous system without first invading the glands. Cure can be expected only by radical measures and the routine removal of the seminal vesicles, vasa deferentia and most of the vesical trigone with the entire prostate as carried out in four cases by the writer, and is shown to be necessary by the 40 cases, including eight autopsies and ten operations, reported in the article. The four cases in which the radical operation was done demonstrated its simplicity, effectiveness and the remarkably satisfactory functional results furnished.

Surgical Treatment of Intraspinal Tumors.—In a review of this subject, RICHARD H. HARTE states (*Annal. of Surg.*, October, 1905) that out of 92 operations for spinal tumors 43 patients died, a mortality of 47 per cent. If, however, the deaths which ensued some weeks or months after the operation are omitted, the mortality is reduced to 28 per cent. The death-rate should not deter operative interference, since beneficial results are so marked. The nature of the tumor, as recorded in 88 of the reported cases, was, sarcoma, 37; adhesions, 11; echinococcus, 8; fibroma, 6; syringomyelia, 5; endothelioma, 4; psammoma, 3; cyst, 3; fibromyxoma, 2; osteoma, 2; and one each of tumor of vertebra, myeloma, lipoma, lymphangioma, primary carcinoma, secondary carcinoma and dermoid cyst. Of the 49 patients who survived the operation 59 per cent. were cured; 34 per cent. were improved, and 6 per cent. were unimproved. With very few exceptions, it is impossible to determine the nature of the tumor before operation. Gummata may nearly always be excluded, and besides are rare in the spinal canal. Sarcoma can only be diagnosed with certainty when it is clearly secondary. Usually it is stated that extradural tumors are more frequent and much less fatal than intradural growths. In the cases of this series in which the situation with regard to the dura was mentioned 50 were extradural and 36 intradural; however, the mortality in extradural cases was 50 per cent. and in intradural cases 47.21 per cent. Possibly this is due to the fact that sarcomata are more frequently extradural than intradural, and that they are more apt, when intradural, to be circumscribed or encapsulated. Practically it is impossible to diagnose between intra- and extramedullary growths. In females the mortality of operation has been only 45 per cent. against 57 per cent. in males, but it is to be noted that sarcomata have been found one-third oftener in the latter. Of 82 cases in which the region of the spine affected is given, the upper dorsal was involved in 33; the lower dorsal, in 24; the lumbosacral, in 14; and the cervical, in 11. The cause of death is given in 28 cases. One-half of these were due to shock and hemorrhage, or to infection and meningitis. Eight patients died from exhaustion, three from recurrence of tumor, two from hypostatic pneumonia, and one from bedsores and sepsis. The method of opening the canal advised is to cut down directly upon the spines, clear the laminae, cut off two or three spines, if in the dorsal region where they overlap; then bite through the laminae, next the pedicles, with large knife-bladed forceps. A crown trephine may be used instead, enlarging the opening so made with rongeur forceps. Hemorrhage is controlled by gauze packing. The canal is then explored, and if nothing is found, the dura is carefully opened with a knife not hitherto used during the operation, after the manner of opening the peritoneal cavity,

and the search continued. If the dura has been opened, it should be sutured, if at all very loosely, since patients do better with free escape of cerebrospinal fluid. All cases should be closed with drainage, the gauze to be removed on the fourth or fifth day, or as soon as the patient is able to bear the necessary disturbance.

Suture of the Spinal Cord.—GEO. R. FOWLER reports the following interesting case (*Annal. of Surg.*, October, 1905) the salient points of which are as follows: The patient, a male, aged eighteen years, suffered a gunshot wound of the back, bullet .38 caliber, one and one-fourth inches to the right of the median line and on a level between the tenth and eleventh dorsal spines. The immediate symptoms were severe shock, complete paralysis below the waist, loss of sensation below the level of one inch above the iliac crests on the sides and midway between the umbilicus and symphysis in front, followed by incontinence of feces, and twitching of the muscles of both legs, especially the toes. Ten days later a laminectomy of the tenth, eleventh and twelfth dorsal vertebræ was performed and the bullet found lying transversely between the severed ends of the cord. The ends of the cord were then sutured with fine chromicized catgut, including a narrow strip of dura which had remained intact. Three weeks later the anesthetic area was found from one and one-half to three inches lower than before operation. Twitching of the toes and occasional clonic spasms of the flexors and extensors of the thigh occur; no control of bladder or rectum, but sensation of distention of either present. Cremaster and patella reflexes and ankle clonus absent, but Achilles jerk and Babinski's reflex present on both sides. A month later bed-sores developed over sacrum and heels. Five months later cystitis occurred, and two months after this the patient suffered an attack of lobar pneumonia. About a year after the operation the bladder and rectal sensation was greatly improved, and this continued to improve during the following year. Both legs were spastic and quite useless for locomotion. The line of anesthesia was found to cross the body about one and one-half inches above the pubes in front, and in the back by a curved line one-half inch below the iliac crests. Above this there is a zone of hyperesthesia about two inches in width. Slight atrophy of both legs, probably from disuse, and a somewhat dry and scaly skin, represented the trophic changes. An examination six months later revealed practically the same symptoms, save the anesthesia extended no higher in front than the pubes. The points of this case are of interest in that they relate to the possibility of regeneration of the spinal cord following a destructive lesion.

The Cause and Treatment of Perineal Abscess and of Peri-urethral Suppuration Above the Triangular Ligament.—The term "perineal abscess" has not an exact significance, asserts SAMUEL ALEXANDER (*Med. Rec.*, October 28, 1905), but includes the conditions described as periurethral abscess, urinary abscess, infiltration and extravasation of urine, suppurative cowperitis, and periprostatic abscess. The infection is always from the urethra, and may occur in three ways: (1) Through the glands of the bulb, the glands of Cowper, or Littré's glands, or the prostate, and from these extends into the perineal tissues; (2) through small fissures in the mucous membrane of the urethra; and (3) as the result of mechanical rupture of urethra from external or internal violence. Infiltration of urine occurs and plays a prominent part in the infection of some cases, but often it is absent, and thus is not an essential causative factor. Stricture of the urethra may or may not be present. In the treatment of this condition it is a waste of time to employ measures other than operative. It is necessary to open and drain the perineal abscess, and also to open the membranous urethra, and to drain foci of suppuration above the triangular ligament.

Morphine-Scopolamine Narcosis.— H. NORRIS (*Univ. of Pa. Med. Bull.*, October, 1905) comes to the following conclusions concerning the use of morphine and scopolamine in general narcosis: The disadvantages to the use of scopolamine are that complete muscular relaxation is not secured, and that, therefore, it should not be the anesthetic of choice in laparotomies or delicate operations, where the patient, in the event of making a movement, would seriously hinder the surgeon. Also in its present status, like all other new things, it must be used with discrimination and in proper amounts, for while no deaths have been attributed to its use, should some fatalities occur, immediately there would be a wave of adverse criticism. Its advantages, on the other hand, are numerous. The patient is saved the fear of nitrous oxide gas, ether or chloroform, the preliminary struggling of anesthetization, the postoperative retching, vomiting, thirst and "ether-back" and much of the paij. There is no risk of ether being dropped into the eyes, the mouth-gag applied or the tongue forceps used. Retention of urine does not occur, and peristalsis is not interfered with. Last comes the question of expense, sufficient morphine and scopolamine for an ordinary operation costing roughly about two cents against ether at 25 cents per 100 grams. In patients with pulmonary tuberculosis it would seem to be far preferable to ether and in military surgery this form of anesthesia should have a very general use.

THERAPEUTICS.

Freedom from Uric Acid.—Under the above title ALEXANDER HAIG (*Med. Rec.*, August 26, 1905) returns to his antiquated notions and advocates a plan of life in which an equilibrium between the formation and excretion of uric acid is maintained in the human body. The rationale of the plan suggested depends upon keeping the blood normally alkaline. The evils consequent to uric acid retention are gout in the winter months, and subsequently, in the spring, depression, anemia, lethargy, and debility due to the resolution and clearing out of that which has been stored. Underfeeding as a means of diminishing this metabolic product is not advised, but rather a method of living which will result in the elimination of that normally formed. To clothe warmly and to live in warm rooms is a prime factor. Though fresh air is essential, it should not be gained at the expense of exposure to cold, since this will do more harm by retarding uric acid elimination than can be possibly gained through the small increase in oxygen thus obtained. For the same reason the morning cold bath, tonics and changes to invigorating climates are not considered ultimately beneficial. In regard to food, potatoes and other alkaline vegetables should be consumed in abundance, whereas fruits should not be eaten out of season and sparingly at any time except in very warm weather. Also it is advised to secure a proper distribution between bodily and mental exertion.

Food Factor in Uricemia.—The self-curative influence of arthritic pyrexia upon gouty arthritis by means of increased combustion and the subsequent freedom from all the so-called gouty symptoms leads FRANCIS HARE to assume (*Med. Rec.*, September 2, 1905) that all these abnormal systemic manifestations depend upon hyperpyremia, the fundamental factor of uricemie. This view explains also the natural clinical history of chronic articular gout. In this condition, there being practically no pyrexia, the hyperpyremia will remain unrelieved,

the uricemia will persist, and the articular uratic deposits will not only not undergo reabsorption, but will tend to increase progressively. Thus chronic articular gout tends to progressive deterioration, constitutional and local. The weak point in the hyperpyremic theory of gout is the hitherto unsupported assumption that the structurally and functionally normal kidney finds it difficult to extract uric acid from overcarbonized blood. It may be admitted at once that no explanation of this disability can be offered, but it can be shown by independent evidence, not only that hyperpyremia and the dispersion of hyperpyremia involve uricemia and the dispersion of uricemia respectively, but also that the elimination of uric acid from the blood depends inversely upon the degree of pyremia. Normally daily pyremic fluctuations occur, and it has been argued that throughout the twenty-four hours there is a tendency to inverse fluctuation between pyremia and the rate of combustion. On the view that the menstrual flow constitutes one form of carbonaceous expenditure, there is probably a normal tendency to hyperpyremia just before and at the onset of menstruation, a dispersion of this tendency thereafter. Physical exercise greatly increases the rate of combustion; it tends, therefore, to disperse hyperpyremia and to reduce pyremia, the output of uric acid being markedly increased. It is important to note that the increase of uric acid excretion which follows exercise is merely temporary. Like physical exercise, pyrexia tends to disperse hyperpyremia and to reduce pyremia through increase of combustion, but in most cases pyrexia operates to the same end through decrease in the carbonaceous income from anorexia and impaired digestive power. And again, it is essential to know that the increase of uric acid excretion following the onset of fever is merely temporary. It is fair to conclude that this increase of uric acid excretion represents the releasement of a prior retention in the blood; that during the continuance of most pyrexias, uricemia is precluded; but that during convalescence, when the exaggerated combustion has ceased, possibly to be replaced by a reactionary retardation of combustion, and when the carbonaceous income from the alimentary canal is again rising, then uricemia from deficient renal excretion once more becomes possible. Plumbism conduces to hyperpyremia through impaired decarbonization, catabolic and anabolic, and is almost always associated with uricemia and diminished excretions of uric acid. The explanation of lessened pyremia in paroxysmal neuroses is through the increase of physical exercise. But migraine acts through interruption of the carbonaceous income, from anorexia and cessation of digestion and absorption. Uric acid formation depends upon the disintegration in the tssues of nucleoproteids, endogenous, and of purin substances taken with food, exogenous. It seems, therefore, that uric acid excretion depends directly upon the introduction of uric acid-forming material, and inversely upon the degree of pyremia. The argument for the twofold causation of uricemia and uric acid excretion seems conclusively shown by the facts that in the gouty the rise in uric acid excretion after the ingestion of purin substances appears to be very much delayed, and that during starvation the excretion after the thirteenth hour is almost constant.

The Treatment of Non-Malignant Strictures of the Rectum.—HOWARD A. KELLY, M.D. (*Am. Med.*, September 16, 1905), says that painstaking prophylaxis should guide us in the treatment of rectal strictures situated in the distal portion of the bowel. Careful investigation should be made in all cases of so-called diarrhea and dysentery. The treatments consist in rest, diet, keeping the upper bowel emptied, cleansing solutions and applications, healing applications and packs. A stricture of moderate caliber may be cured by dilation with bougies; by the elastic pressure of a rubber bag, distended by air and made to distend in a uniform manner by a silk covering (Sweetnam's plan); and by digital distention and massage. If a contracting bowel is watched and treated, the patient may go on for a long time, for years, even, in great comfort, though the disease is not cured. Resection of the bowel may be practised even when the disease extends over an area as long as 20 cm. A posterior incision with the removal of the coccyx, and sometimes of the last sacral vertebras, with the preservation of the anal sphincters and amnulla when possible, and an end-to-end anastomosis of the bowel, is the best procedure. It is sometimes worth while in the attempt to save the bowel when the local process persists in advancing, to make an artificial anus completely diverting the fecal current. The bowel may then heal and the extensive surrounding inflammation undergo resolution, when after some months or a year or more, and generally after a successful resection, the artificial anus may be closed. In a high grade of tuberculous or syphilitic stricture, when an extensive area is involved, it is often best to make an artificial anus and extirpate the diseased bowel. Dr. Kelly prefers to do this by amputating the bowel above the first, and ligating such hemorrhoidal vessels of the lower end as are within reach, and then to complete the extirpation from below by an incision from sacrum to anus. Advanced tuberculosis always demands extirpation, and syphilis calls, of course, for persistent specific treatments.

PRESCRIPTION HINTS.

Gastric Flatulence.—The medical treatment consists in antiseptics, absorbent powders, laxatives.

℞ Peroxide of magnesium .....6 grs.

For one wafer to be taken half an hour before meals.

After the repast:

℞ Prepared chalk .....15 grs.
Bicarbonate of soda .....8 grs.
Calcined magnesia .....8 grs.

For one powder; to be taken in water or aniseed tea.

In case of pain or burning in the stomach, opium and belladonna might be associated to the powders:

℞ Prepared chalk S.N. of bismuth ....15 grs.
Calcined magnesia .....12 grs.
Powdered opium .....1/8 gr.
Powdered belladonna .....½ gr.

Treatment of Ozena.—The treatment of this troublesome affection has taxed the patience and energies of many practitioners. Numerous are the remedies recommended for it—irrigation of the nose, with solutions of chlorate of potash, boric acid, hermophenyl, oxygen water (3 vol.), etc., followed by a variety of powders given in the form of snuff and general treatment. Dr. Lubet says the treatment of ozena is much more simple and should have for principal object the removal of all crusts from the mucous membrane, as where there are no crusts there is no odor. His idea is to stimulate the nasal secretion so that the crusts become detached of their own accord. To obtain that end, he recommends the aspiration through the nose several times a day of a strong boric acid ointment:

℞ Boric acid .....4 drams
Menthol .....6 drams
White vaseline .....1½ oz.

The boric acid excites the secretion of the membrane, detaching the crusts, and when the patient blows the nose with a certain force they are expelled.

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THE MODERN MINOTAUR.

HERBERT SPENCER, in the introduction to his essay on Education, states that "we that have but span-long lives" must ever bear in mind our limited time for acquisition, and must settle which things it most concerns us to know. In his classification of the relative values of what Bacon calls "knowledge," Spencer places the training which ministers to self-preservation and to the rearing and discipline of offspring before that which is devoted to the gratification of taste and feelings.

We interpret this to mean that a knowledge of the laws of health is more fundamental than a knowledge of art, literature or music, and an appreciation of scientific methods of controlling and preventing disease is more imperative than a knowledge of historical events or abstract sciences; but our general method of education does not bear out an appreciation of these relative values.

The knowledge of the masses concerning hygiene, living and the spread of infectious diseases has been confined thus far almost entirely to what has been taught them by the family physician, or has come to them through contact with the officials of Health Boards. The efficacy of the latter methods is seen in New York in the fact that in the last ten years it has, by its various phases of work, reduced the tuberculosis death-rate more than twenty per cent.

The proposed Tuberculosis Exhibition, under the auspices of the National Association for the Study and Prevention of Tuberculosis, which will be held during the next two weeks at the Museum of Natural History, will mark an epoch in the education of the city in this disease. The effects of the conference of physicians and the public lecturers will spread to many cities, and the traveling exhibits which are planned will doubtless be in demand in smaller towns.

But this carefully concerted educational movement will have but temporary effect, unless the scientific men and the citizens of New York unite in making the exhibition and the lessons to be derived from it permanent. What the Board of Health has done painfully by law, can be done a hundred times more thoroughly through the co-operation of an educated public. And for such education there is nothing so valuable as convincing exhibits. There is no place so fitting for a permanent exhibit of the outdoor living places, and the window-lighted rooms of the tenements, as well as all details pertaining to the care of tuberculosis, as the Museum of Natural History of New York.

During the last few years very marvelous exhibits have been established in Europe. Some of these were brought to the World's Fair at St. Louis. They included models showing every form of skin disease, as well as bacterial growths. It would be possible for New York to establish in her museum, which has thus far outrivaled all its old competitors in the lines already developed, an exhibition of the Natural History of the Diseases of Man, beginning with the more serious contagious diseases, such as tuberculosis, malaria, yellow fever, and smallpox, and illustrating by means of set figure pieces the typical aspect of the patient, and the kind of surroundings in which he should be nursed.

The visitors to the Museum to-day are divided into two classes, viz., those who bring in knowledge with them, but who take away strong impressions, and those that come with some information, seeking for more. The former flit from case to case where the birds with their young appear to be living in their natural habitat, with their proper food and their very footprints reproduced in detail. The latter extend their observations to the exhaustive collections in the side cases.

A forcible demonstration of the prevalence of contagious diseases, including venereal diseases and the exanthemata, with a vividly impressed sense of the value of their methods of isolation, such as the consumptive tent, and the malarial or yellow fever patient's mosquito net, with the contrast between the single scar of vaccination and the loathsome eruption and the red pock-marked skin of smallpox, would do more to interest the masses in the work of the Board of Health than any other form of propaganda, while the more scientific demonstrations would be of vast benefit to intelligent members of the community, to medical students, nurses and settlement workers.

The plans for the Natural History Museum are sufficiently ample, and the wealthy men of New York are sufficiently generous to make a department of natural science in the museum that would be an educative force sufficiently strong to carry its effects through the whole country. Such an exhibition of the life history and hygienic treatment of disease would comply with Spencer's requisite that education should give first that training which ministers to self-preservation before that which leads to accomplishments.

During the present Tuberculosis Exhibition every physician should urge the members of his clientele to attend some of the public lectures and see the exhibit. As in the days of fables the people of the city crowded out to see Theseus slay the monster that demanded a hundred of their fairest youths and maidens, so should we be no less interested in what is perhaps the most striking feature of medicine that the century will see, the systematic education of the masses in the care of the nation's health.

PREMATURE DEATH IN THE MOSQUITO.

FAIR Science may not have frowned on the humble birth of the mosquito theory, in connection with the etiology of yellow fever, but most certainly melancholy will never mark it for her own, if the United States officials persist in that super-redundancy of speech, that is popularly ascribed to the poll parrot. Now it is a wise and safe rule, and one of the practical maxims of modern politics, not only not to talk too much, but to let well enough alone. And that is just where our professional sanitarians have erred. Good wine needs no bush, and it is much better, like Brer Rabbit, to lay low and say nothing, than it is to give out entangling explanations, that from an inability to work both ways, may react and prove a veritable boomerang to the unlucky author.

Now, if there is one thing that the medical profession of to-day has accepted, it is this same "mosquito theory." By them it is unquestioned, and the work of Reed, Lezare, and the earlier investigators, will always be remembered and regarded as marking an epoch in the discovery of the cause and spreading of yellow fever, and consequently in the handling of prevailing epidemics. But on the other hand, there is quite a big proportion of the laity at large that do not believe in it, and it is unquestionably true that the recent epidemic at New Orleans, that ran from May until October—October 24, to be exact—has been a most unfortunate bar to the more popular acceptance of the theory.

That the general public should be slow to put faith in it is only, from the previous history of medical discoveries, to be expected. Jenner's belief in vaccination was only vindicated by years of experience, and to this day there are thousands of parents who cause untold trouble to the boards of public schools by refusing to have their children submitted to it.

The ordinary average American citizen is a thinking, reasoning entity. He does mind the whys and wherefores, and if he cannot understand a matter, he is very apt to make pertinent inquiries. Thus, in the early days of the discussion, a type of this class wrote to a newspaper and asked if it were true, that in order to have yellow fever, the sufferer must have first been bitten by a certain kind of mosquito, and if all that was necessary to stamp out an epidemic of it would be the extermination of the particular variety of insect that caused and disseminated it? All this was easy sailing, but the perturbed spirit did not rest here, but went on to inquire, "if this was true, how did the first victim of yellow fever get his load?" This query was disposed of by a high and mighty official by telling him "not to ask silly questions."

Now, "silly" or not "silly," this one question has been the stumbling block, in argument at least, ever since the theory first came up. It has never been clearly and satisfactorily answered, and has been relegated to the riddles of the Sphinx in company with "Who killed Cock Robin?" "Who struck Billy Patterson?" and "How old was Ann?" It is, in fact, impossible

to have a hypothesis, like Oliver Wendell Holmes' "One-hoss Shay," that has not always "somewheres a weakest spot," otherwise it would become a fact, and cease to be a hypothesis. But this mosquito problem has practically been solved, for after the experiments at Havana, the most skeptical minds in the medical profession have become convinced of its truth, and such being the case, it is a pity to weaken the faith of the multitude by reports that are not only untrue, but which are ludicrous.

For after all, it is to the masses at large that the advocates of any measure requiring governmental appropriations must look. They make the man, and the man makes the money, and if a Representative in Congress finds out that his constituents do not care for the advancement and support of any pending measure, he is hardly likely to vote for the old flag and an appropriation, or to see that any of the public funds are expended in its behalf.

As we have already said, the epidemic in New Orleans began in May and continued to October 24, when an official proclamation announced the death of every *Stegomyia* in the city and suburbs, and rang the death knell of them all, thus assuring the end of the epidemic of yellow fever, and the impossibility of any farther infection. Now, by a curious and interesting coincidence, this was settled just in time to fit in with President Roosevelt's visit to New Orleans. "In all human probability," says the *Washington Post*, "he would have gone there just the same." They did not, however, know that for certain, so they exterminated the mosquito, and therefore stamped out yellow fever, on the very day before that fixed for his arrival, which made everything pleasant, friendly and logical.

All this was simple, in fact, it was as easily arranged as the announced death of Nanki Poo in the last act of the "Mikado," but unfortunately yellow fever has appeared at Havana, and as that place was also reported as being free from the baneful mosquito, it became necessary to account for the resurrection of the *Stegomyia*. And in order to do this, they promptly imported a lot of fine, husky, infected insects from *New Orleans*—importing them in boxes of electrical machinery, revived and tucked away for a nice little trip to Havana.

Luckily the epidemic there is, thus far, but a light one, but the days of the resurrection of the dead have faded into the dim past, and it is a shame to now cast either doubt or ridicule on established facts by an effort to induce a well-educated, thinking community to believe that all things are not what they seem. The *Post's* summing up was short but pithy:

"President due at New Orleans—October 25.

"*Stegomyias* killed by proclamation—October 24.

"Yellow fever appeared at Havana—shortly after.

"Cause—Mosquitos imported from New Orleans.

"Therefore let us enjoy ourselves in a spirit of true gratitude to that inscrutable Providence that has equipped us with a sense of humor."

PROGRESS IN THE DIAGNOSIS OF RENAL DISEASE.

THE desire to make use of positive findings in cases of obscure genito-urinary disease, although still somewhat confined to a small body of specialists, is not by any means a new one. From recent developments it would appear that the opportunity to make positive conclusions will, ere long, be given to the general surgeon or even to the general practitioner. If so, this will be due to the recent improvements in instruments required for physical examination of the parts and to a simplification of the technic.

A review of the history of the efforts made in these directions cannot fail to be of interest.

So long ago as 1874, Tuchmann, a German physician practising in London, as recorded by Frank T. Vale (*Annals of Surgery*, January, 1905), had the foresight to emphasize the value of urinary segregation. Thirty-one years have elapsed since the publication of his memoir and hosts of observers have followed in his footsteps, yet how discouragingly small an effect has actually been made by the efforts of these progressive men on the general attitude of the profession! Until very recently, at least, the general tendency has been one of "laissez faire."

Tuchmann employed a short right angle lithotrite, between the blades of which he compressed one ureteral orifice, the urine collecting in the bladder during the period of compression representing the secretion from the other organ. It is true that the method was crude and of questionable merit and certainty, for it was determined entirely by tactile sensation, nevertheless it was the first ray of light cast upon an absolutely dark subject.

Gustav Simon, a few months later, took exception to Tuchmann's method and demonstrated that it was possible to catheterize the ureter. Thus it happened that at the very beginning of a scientifically accurate study of the urines, the two rival methods of segregation and catheterization were started side by side. It is surprising, when one considers the immeasurable benefits which these two methods are capable of bestowing upon persons afflicted with a vast number of renal lesions, that for so long a time they should have been allowed to drag along without the attention being paid to them which their importance would seem to justify.

Grünfeld, it is said, was the first to catheterize the ureter by the aid of direct vision. He filled the bladder with water and employed straight, short endoscopic tubes with a glass window at the distal extremities. He described the technic minutely, and thus anticipated Kelly's classic work by nearly twenty years. Newmann, in a monograph submitted to the University of Glasgow in 1883, claims to have been the first to introduce into the bladder a small electric light. Silbermann, recognizing that ureteral catheterization was a very difficult technic, always to be confined to the hands of a few, modified Tuchmann's instrument for compressing the ureteral orifice. He concealed in a small catheter a rubber balloon, which was made to protrude when within the bladder by filling it with mercury. This reminds one somewhat of Parker Sym's rubber mushroom retractor for perineal prostatectomy. The weight of the mercury compressed the ureteral orifice, but the instrument was confessedly inaccurate.

Weir, in 1883, when discussing the use of Davy's level to control hemorrhage, before the New York Practitioners' Society, called attention to the fact that the ureters were within the area pressed upon by the lever, and suggested that it might be used to determine the comparative condition of the two kidneys in place of the hand, which Sands had employed in at least one case. The perfection of the technic of ureteral catheterization by Kelly, in 1892, in this country, and by Albarran, in 1897, in France, had, until recently, all but led to the entire abandonment of other forms of urinary separation. In 1890 Lambotte described the first instrument for partitioning the bladder. It was ingenious but not entirely reliable. Neumann's instrument consisted of a double catheter provided with a median ridge which formed the septum between the ureteral orifices. Harris, later, devised a separator which is very widely and favorably known, but which is complicated and not always absolutely reliable.

Four years ago Luys, of the Lariboisiere Hospital, stimulated by the remarkable possibilities suggested by the Harris instrument, devised one of a different type, which apparently has done much to further the claims of segregation versus catheterization. Hartmann reports over 400 applications of the instrument in two hundred males and females without accidents and with perfect results.

It is obviously unnecessary to create an instrument which shall be water-tight on the ventral surfaces of the bladder—all essential being to depress the organ between the ureteral orifices. This creates a pocket on either side which is entirely distinct and in which the separate secretion from each kidney will collect. Luys observed that the angles of the trigone have a fixed relation to each other quite independent of the dimensions of the bladder itself. The distance between the ureteral orifices varies between twenty and thirty millimetres, while that from the urethra to the base of the triangle, equally constant, varies between twenty-five and thirty millimetres. The Luys instrument of latest model is peculiar in that the Escat curve has been substituted for the Guyon. Before introducing it, the bladder is first thoroughly washed out with boric acid solution. A diuretic may or may not be given beforehand. The rectum should be emptied. So unattended with difficulty, both for the operator and the patient is the introduction and the use of this instrument, that a general anesthetic is said never to be required. On account of the character of the curve, it is wise to sit the patient up at the termination of the introduction into the bladder. Slight traction and elevation of the handle, followed by a rectal examination, to show that the instrument is centrally located, suffice to give positive results.

It does not seem improbable, if the claims of its inventor are true, that this instrument will ere long form a satisfactory part of the outfit of every progressive general practitioner of medicine.

Urinary segregation is, however, by no means the only important diagnostic measure in genito-urinary disease. Walter Klotz, in a paper read

before the Surgical Section of the New York Academy of Medicine, December, 1904, recited the history of twelve ureteral meatoscopies which he had made in connection with his private work and with Brewer's service at Roosevelt. The significance and value for differential purposes of a proper interpretation of the meatoscopic findings has at least as high a value as the information afforded by the findings of a segregator. Meatoscopy seems to be of particular value in the diagnosis of renal or ureteral tuberculosis.

The X-ray, even in the case of uric-acid stones, has become in the hands of such men as Cole, Leonard and others, virtually an infallible agent in the diagnosis of renal and ureteral stones. At a recent meeting of the Academy, Tilden Brown and George Brewer spoke of interesting methods for excluding the pseudo shadows which have in the past occasionally given rise to errors in diagnosis. Brewer reported one that had been cast positively by the calcified tip of an epiploic appendix, while Brown and others argued that the shadows were occasionally due to sesamoid bones occurring in the tendons of the obturator muscles.

All this activity can end in but one manner. Within a very short time the diagnosis of genito-urinary disease will have been raised from an empirical art of questionable certainty to a science of almost infallible accuracy.

ECHOES AND NEWS.

NEW YORK.

New York Section of the Council of Jewish Women.—This society cordially invites the profession to attend a mass meeting in support of pure food Saturday evening, December 2, 1905, at 8 P.M., at Mendelssohn Hall, 113 West Fortieth Street, New York City. Speakers: United States Senator W. B. Hepburn, P. J. McCumber; Dr. Harvey W. Wiley, Chief of Bureau of Chemistry, Department of Agriculture, and other prominent speakers.

Dr. Palmer Dudley.—At a meeting of the New York Obstetrical Society, held October 10, 1905, the president appointed a committee to draw up a suitable testimonial in memory of our late associate, Dr. Augustus Palmer Dudley, who died July 5, 1905. This committee wishes to express the great sense of loss felt by the entire society upon the announcement of his demise, inasmuch as Dr. Dudley was always a congenial companion, of loyal nature and with a high ideal of friendship. His natural abilities contributed not a little to enliven the scientific discussions of our society, and his contributons to the literature of our specialties were always read with gratification and profit. His appointment to several hospitals and to professorships in two medical colleges attest a skill of high order as a surgeon and marked proficiency as a teacher. The committee recommends that a copy of this testimonial be spread upon the minutes of this society and other copies be sent to the medical journals and to Dr. Dudley's family, with the expression of deep sympathy from the members of this society for their bereavement. Bache McE. Emmet, George H. Mallett, James N. West, *Committee.*

American Tuberculosis Exhibition.—The American Tuberculosis Exhibition, which is being planned under the joint auspices of the National Association for the Study and Prevention of Tuberculosis and the Committee on the Prevention of Tuberculosis of the Charity Organization Society of New York City will open on November 27 and close on December 9. In arranging the exhibition the Committee on Arrangements laid its chief stress on a popular presentation of the facts of the situation and the approved methods of prevention and cure. Charts and tables of all sorts will show the public the conditions which confront it, and by means of photographs, plans, models and apparatus the recognized measures which have been taken to cure the disease will be presented in graphic form. The cooperation from sanatoria of standing in the United States and Canada has been particularly cordial and both public and private institutions from all parts of the country will be elaborately represented. A representative collection of material from the recent Exposition in Paris has also been secured and will doubtless form one of the most attractive features of the New York Exhibition. Naturally, the various devices and mechanical appliances which are now used in the treatment of this disease will be shown and the models of the various forms of tents and buildings for the open-air treatment will be given a prominent place. A series of public meetings has been arranged, all of which will be held at the Museum during the time of the Exhibition. On the opening night the principal address will be given by Mr. Talcott Williams, of Philadelphia, while brief addresses will also be made by Mayor McClellan, of New York, by Dr. Darlington, Comissioner of Health, and by President Jesup, of the Museum.

On Wednesday evening, November 29, a special meeting, devoted to tuberculosis and the trades, will be held, at which the principal address will be by Mr. Graham Taylor, of Chicago, with short addresses by President Gompers, of the American Federation of Labor, and other well-known representatives of organized labor.

On Friday evening, December 1, a special meeting for physicians has been called, at which addresses will be made by Drs. Lawrence F. Flick, of Philadelphia; W. A. Evans, of Chicago; Dr. A. Jacobi, of New York; Vincent Y. Bowditch, of Boston, and others. Invitations to this meeting have been sent out widely, and it is expected that a large representation of the profession in New York and other parts of the country will be in attendance.

On Friday, December 8, a meeting for the teachers of the public schools has been arranged, the address on that occasion to be by Dr. S. A. Knopf, of New York. The Board of Education of the city has lent itself most cordially to the movement and is officially urging the teachers to attend the meeting as well as the Exhibition.

The effects of an undertaking on a scale such as this must inevitably be far-reaching. Already the Committee is in reecipt of numerous requests from

other cities for the loan of the material, and it is hoped that the contributors will cooperate in the effort to provide for a series of similar exhibitions in other parts of the United States.

The National Association for the Study and Prevention of Tuberculosis is also endeavoring to form one or more traveling exhibits on a smaller scale, which may be packed in small compass and kept constantly on the move, being exhibited in towns and villages where it would be impossible to arrange for or finance a large exhibition.

The meeting for the medical profession on the evening of December 1, and the fact that a special call is being sent out to sanatorium physicians to meet on the afternoon of that day, will doubtless attract a large number of physicians to the Exhibition at that time. It may be added for the information of the medical members that a special exhibition of pathological material has been installed, the nucleus of which is formed by contributions from the Phipps Institute in Philadelphia, and the Laboratory at Saranac Lake.

PHILADELPHIA.

Fire Starts Patients.—As a result of the burning of a can of paraffin at the Bryn Mawr Hospital $100 worth of damage was done. The alarm spread excitement among the patients, but they were soon pacified on learning that the flames were controlled by the employees of the institution.

Hospital Aid.—The twenty-sixth annual charity ball will be held at the Academy of Music, January 24, 1906. The proceeds will be divided between the University of Pennsylvania Hospital, the Jefferson Medical College Hospital, the Howard Hospital and the St. Timothy's Hospital. The German-American ball will be held February 5, 1906, the proceeds of which will be divided between the Children's Hospital, the Pennsylvania Epileptic Hospital and the Kensington Hospital.

American Society of Tropical Medicine.—This society held its public meeting Friday, November 17, 1905, at the Jefferson Medical College. The first paper by Dr. F. Cortright Wellman, Benguella, Angola, West Africa, on the "Study of Tropical Medicine," was read by the secretary of the society, Dr. Joseph McFarland. Dr. Claude A. Smith, of Atlanta, Georgia, read a paper on "Uncinariasis." His paper was illustrated by means of lantern slides, showing the changes induced in the skin by infecting patients with the eggs of the Anchylostoma duodenale.

The Philadelphia Pediatric Society.—This society held its regular meeting Tuesday, November 14, 1905. Dr. Eleanor C. Jones showed a case of "Atypical Hemiplegia." Drs. W. G. B. Harlan and T. H. Weisenburg presented a case of "Latent Hemiplegia in a Child of Eight Years, Made Evident by Etherization." Dr. J. H. W. Rhein showed a case of an infant of nine months with "Bell's Palsy." Dr. Hubley R. Owen (by invitation) exhibited a case of "Rickets with Marked Deformities of the Clavicles." Dr. C. Y. White showed card specimens of "Miliary Tuberculosis." Dr. C. H. Lefcowitch reported a "Case of Diabetic Purpura in a Boy Three Years Old." Drs. C. F. Judson and C. D. Camp (by invitation) made a final report on a "Case of Cerebellar Tumor with Post-mortem Findings." The case was shown to the society April, 1905.

Bequests.—The will of Miss Marie E. Brasier gives to the St. Joseph Hospital four houses at Broad and Bedford streets, $5,000 for a free bed in memory of Charles A. Brasier, and $5,000 for a free bed in memory of Elizabeth P. Brasier. The Maternity Hospital and St. Vincent's Home will receive $10,000; St. Mary's Hospital, $3,000; the Children's Hospital (Homeopathic), $300. The German and the Episcopal hospitals will each receive $100 according to the will of Sue M. Remak. The will of Joseph E. Gillingham, of Clairemont, gives to the Pennsylvania Hospital $50,000, and to the Veterinary Department of the University of Pennsylvania $50,000, providing certain contemplated buildings are erected by the University at the time of the testator's decease or within three years thereafter. The same will gives to the Woman's Medical College $5,000 to be used for founding and maintaining a scholarship; the Bryn Mawr Hospital $5,000 for a free bed in the name of his wife; the Maternity Hospital, $5,000; the Charity Hospital, Morristown, $5,000. The Episcopal Hospital will receive $5,000 to endow a bed according to the will of Nancy W. King.

CHICAGO.

The Nicholas Senn Club.—A club by this name has been incorporated in this city for scientific research by Drs. Fernand Henrotin, Byron Robinson, Orville W. MacKellar and Arthur McNeal.

A Medical Publishing Company Burnt Out.—A three-story brick building occupied in part by the *Alkaloidal Clinic*, at Ravenswood, Ill., with the presses and publishing equipment, was completely destroyed by fire last month. The loss sustained was $200,000.

Crusade for Pure Food.—The Illinois Consumers' League will cooperate with the General Federation of Women's Clubs in a crusade for pure food. Accordingly a committee has been appointed to call the attention of the women of the State to the adulteration of food stuffs.

New Tuberculosis Camp.—A new tuberculosis camp is to be established near Blue Island, Ill., for the benefit of Chicagoans suffering with the disease. It is to be the gift of Mrs. Edward L. Gaylord, who has donated 160 acres of land to make the institution one of the most modern of the kind in the United States. Mrs. Gaylord will also provide the fund for the maintenance of the camp. The equipment of the institution will cost about $5,000. Probably 25 patients will be taken care of at the beginning. The camp will be given over to the supervision of the Visiting Nurses' Association. The new institution will be opened in the spring, and will be conducted along the ideas of fresh-air living.

Dr. Senn Honored by the Profession.—A testimonial banquet was given to Dr. Nicholas Senn at the Auditorium Hotel, Chicago, Saturday evening, November 11, 1905. There was an attendance of 686, with representatives present from twenty States. Toastmaster Evans called the meeting to order and introduced Dr. Joseph D. Bryant, of New York, who presented Dr. Senn with the gold medallion. Among other things, Dr. Bryant said that along the pathway of medical endeavor for nearly a quarter of a century were noted enduring examples illustrative of his wise forethought and generous cooperation in the cause of advanced standing. Instances of his surgical technic foretold notable results that now proclaimed great surgical triumphs. The organization of military medicine, of no recent date, had yielded an abundant harvest because of his

early conceptions and continued earnest culture. The books written by him testified respectively to the bright sunshine of active life and the somber shadow of recollection. Human afflictions, which before his time yielded only to indomitable fate, now yielded to the outcome of the inspiration of his teaching and the handiwork of his technic. Long-deferred and defeated hopes were now revealed in the happy opportunities contributed by the saving graces of reparative wisdom and skill of which he had given the lion's share. As a humble servant of joyous friends, he presented to Dr. Senn in their behalf this beautiful symbol of the love and respect which they cherished for him, the likeness of a sterling man, embossed on pure gold and bearing the legend of true distinction. The next speaker was Dr. L. G. Nolte, Milwaukee, Wis., who presented a silver loving cup in behalf of Dr. Senn's former private students, and in so doing said: "As a token of love and affection, Dr. Senn, I present you with this cup, the emblem of love, and wish you a great many more years of usefulness, and trust that you may spend the afternoon of your life in good health. The toastmaster then introduced Dr. Senn, who said, among other things: "I accept from your hands, Dr. Bryant, this beautiful medallion, and assure you that I would rather accept it from your hands than from the hands of anyone I know of. I appreciate this tribute. I value it much more highly than I would a decoration by a royal hand. That means the judgment of one man; *this* is an expression of love, respect and good wishes of the noblest of all professions. There are two things in this world, Dr. Bryant, that have always an intrinsic value, one of which is labor, the other is gold. This medallion will be cherished and highly valued as a souvenir of this memorable gathering. It is to me an evidence that my labors, ardent as they may have been, have not been entirely in vain. I thank you, Dr. Bryant, for your presence and for your eloquent address. I wish also to thank Dr. Nolte as the spokesman of my old students, and wish to say to him that I may have been in the past a somewhat severe master; I may have seemed to my students unjust at times. But let me say to you I have never asked a student to do what I would not do myself."

Dr. Senn then read a poem, the text of which was taken from one of the most famous of the ancient philosophers—Seneca. The title of the poem was "For Life Is Short, and Art Is Long." In conclusion, Dr. Senn said: "Let me return my heartiest thanks, first, to the members of the Committee of Arrangements, and particularly to Dr. Evans. I thank all the gentlemen who have come from afar to bring me tributes from the profession. I thank the Swiss choir for their sweet songs, and I thank each and every one of you for your presence, your friendship, your respect and for your good wishes."

American Surgery.—The next speaker was Dr. William J. Mayo, of Rochester, Minn., who spoke to the toast "American Surgery." He said that when this subject was assigned to him he asked himself the question, Is there a surgeon in this country that was so typical and characteristic that it could be said to be "American Surgery?" That there had been such, there was no question, and that there was a time in which it did not exist was equally true. The time had now arrived when we could say there was an American surgery. Twenty years ago the surgery of the United States of America was the surgery of the world, based on clinical observation and a most inadequate pathological foundation. The early contributions to surgery in America did not come entirely from the seacoast cities, but they came from this country as a whole. Bigelow, Mott, Morton, and many others from the seacoast, did most notable things; but it should be remembered that Sins, Battey and McDowell came from the South; and we had in Indianapolis Bobbs, who did the first operation on the gall-bladder; and Connors, who first removed the stomach in the Mississippi Valley. We had Wolcott, of Milwaukee, who first operated on the kidney; then we had Brainard and Gunn and Edmund Andrews, of Chicago. But twenty years ago we were behind in surgical pathology. Here and there men of European education came to this country and established spheres of influence for scientific work. The work of Fenger, of Chicago; Lange, of New York, and others, while to a certain extent local in character, was of incalculable benefit to the people of the entire country. The mass of the profession of this country twenty years ago were behind the Germans in pathology. Germany in scientific surgery had passed us by. The mass of the profession in this country did not know the position they occupied until Senn's Principles of Surgery was published. This book was popular. It had its effect in diffusing knowledge and surgery in this country became instantaneous. This book did more to teach the profession how little they knew and how much that was being accomplished than any one thing that had happened. Following this were notable contributions to surgical pathology by Roswell Park, published in the *Annals of Surgery*, by John Collins Warren, of Boston, and others. At about this time there also appeared the great book of Gerster. It taught the profession how to apply the new knowledge which Senn, Fenger and others had brought forth. There appeared at this time, too, a series of letters from abroad, published in the *Journal of the American Medical Association* and written by Senn, describing in clear-cut, forcible language the conditions as they actually existed in German clinics. These letters told the profession of America what German surgeons did, what they thought, and how they did it. Dr. Senn had written up the work of these men in such an absorbing and fascinating style that every man felt as though he himself had visited these clinics and had seen these men work. These letters were a stimulus for every medical student who desired to do surgery to go to Germany or be drawn there as by a magnet. Multitudes of American students went to Germany, so that there were more medical students in that country than in all the other foreign countries combined. American surgery was soon Germanized in the United States under the leadership of Dr. Senn. In America, more than in any other place, there was now taught what might be called living pathology. At a time when American surgery was relatively held in contempt, Senn, by a series of brilliant articles on practical subjects, such as pancreatic disease, branchial cysts, etc., made the surgeons of the world respect America. It was fitting, therefore, that the profession should acknowledge their indebtedness to this man, whose work had been an inspiration to ambitious Americans, and it was well to know that by hard work a reputation could be built up in the West that was durable, and for this and many things more the profession owed a lasting debt to Dr. Senn.

Colonel Harvey, U. S. Army, the next speaker, said the medical department of the army was greatly indebted to Dr. Senn for many valuable improvements

and suggestions. Therefore, he felt it was a privilege to be present to testify his appreciation of Dr. Senn, who had not only made substantial surgical contributions to the medical service of the army, but had extended many favors and rendered many kindnesses to the members of his corps.

American Medical Association.—Dr. Lewis S. McMurtry, Louisville, Ky., in responding to this toast, congratulated Dr. Senn that he was the recipient of such a magnificent ovation as had been tendered him. He said Dr. Senn did not belong to the profession of Chicago; be belonged to no section, to no locality, but to the profession of the entire country. Besides, he was an American. In the great advances that had been made in medicine and surgery during the past twenty years the most potent influences in this great advancement had been the medical societies and medical press. They had played an important part in the stimulation of original research, in the development of individuality, and in the diffusion of knowledge. The local medical societies had grown both in size and number; they had become great post-graduate schools from which no pupil ever graduated. The American Medical Association had a function almost exclusively its own among the medical organizations in this country, namely, to reach the great body of the profession, to federate into one great organized body through county, district and State societies the organization of the profession which would be in accord with the spirit of the age, as seen in every department of human endeavor, and to diffuse knowledge among the members of the profession by the publication of a great weekly medical journal, and to bring the profession into close touch, so that great work could be accomplished. It was the special purpose of this Association to reach after the country doctors, the village doctors, doctors in small towns, and bring them in close touch with one another. This association had within the past few years grown to be one of great power, and yet its work had scarcely begun. There were 130,000 physicians in the United States who needed to be brought into the district and county societies and within the influence of this great national organization. In this work there had been leaders, and among them the speaker mentioned the founder of the association—Dr. Nathan Smith Davis. Furthermore, through Dr. Senn's achievements his influence had been felt in the association for years. His contributions given to the Section on Surgery had been valuable. The association was the largest body of medical men in the world, and was destined to accomplish work along lines that would be more appreciated by the mass of the profession than any other medical society in existence.

The Medical Man Versus the Surgeon.—Dr. John A. Witherspoon, Nashville, Tenn., after brief reference to the late Spanish-American war, said that should the inevitable come and war threaten this country again, the boys of the fathers who wore the gray, as well as the boys of the fathers who wore the blue, would march side by side, and they would want no man as their surgeon more eagerly than Nicholas Senn. He was not only a great surgeon, but he had shown his patriotism. He was a good citizen. He was ever ready on any and all occasions to bare his face to the bayonet of any foe that might threaten this grand and glorious country. Therefore, the profession doubly owed him honor. If it were not so late he could bring to him many of the encomiums he had heard of him in the South, and lay them at his feet, with the statement that "We in the South, Dr. Senn, love you as dearly as do your Badgers of yore."

Dr. Charles Adams, Chicago, representing the Association of Military Surgeons, said that this organization had now many hundreds of members with one heart, and this beats for its founder, Dr. Nicholas Senn. He recounted Dr. Senn's contributions to military surgery, and the active part he had taken in the deliberations of that body.

Dr. Daniel R. Brower, Chicago, spoke of Dr. Senn as a traveling companion, and of the trip he took with him around the world around Siberia. He referred to Dr. Senn's international reputation as a sugeon, and to the manner in which he was royally and hospitably entertained by distinguished surgeons and physicians in the various cities they visited *en route*. Dr. Senn proved himself to be a very agreeable and delightful companion, and their trip was one triumphal march.

American Medical Literature.—Dr. Charles A. L. Reed, Cincinnati, Ohio, in responding to this toast, said that Dr. Senn had contributed largely and liberally to the value and quality of the great mass of surgical literature. American medical literature had its birth in a very unpretentious publication in the city of Boston some 218 years ago, when Dr. John Fletcher published a small brochure directing the people how to avoid contamination by smallpox. From that little article of about four thousand words had grown a mass of literature which perhaps would make a pyramid of great pretentions if it could be measured. In that pyramid were to be found valuable contributions from the pen of the guest of the evening. It, therefore, became exceedingly appropriate that this toast should be offered at a banquet intended to celebrate the achievements of Dr. Nicholas Senn. It became apparent when it was remembered that in the last twenty years the official index of his contributions to American medical literature amounted to more than 250 entries, 238 of which related to surgical subjects. In the list of titles were 12 printed volumes, some large, some small, but all of them important, many of them being used as textbooks, others as standard works of reference in the majority of medical schools in the Western hemisphere. Of these contributions quite a number had been translated into foreign languages. The range of subjects embraced practically every department of surgery. For the most part these contributions were absolute protocols of original investigation. They covered, among other subjects, the surgery of the pancreas, stomach, the intestines, gall-bladder, etc.

Dr. William E. Quine, Chicago, spoke of his association with Dr. Senn as an interne at the Cook County Hospital. He had seen Dr. Senn as an interne engaged in controversy with the members of the attending staff in relation to problems of diagnosis, and he had seen him floor every one of them on numerous occasions, though boy he was. The intensity of his earnestness, the thoroughness of detail in respect to his methods, had the effect of impressing the speaker and of inspiring him in his future work. It was something of a liberal education to have been under the inspiration and guidance of such a man. It was a gratification to him to participate in these festivities and to contribute in a small way to the testimonials that had been laid at the feet of his old friend. He was sure that Dr. Senn would close his professional career as he began it, and as he had lived it through every day of his life—with sincerity, with intelligence, with dignity of effort, and with an eye single to the best interests, the greatest happiness of his fellowmen, and the greatest advancement of his brethren in the medical profession. The singing of "Auld Lang Syne" brought the proceedings to a close.

CANADA.

The New Toronto General Hospital Scheme Launched.—A conference was held on November 14 of the various parties interested in the proposed new General Hospital for Toronto. The result of the conference was the appointment of a special committee to act with the members of the present Board of Trustees of the hospital in considering and framing a new constitution and mode of government for the hospital. Dr. R. A. Reeve, the Dean of the Medical Faculty of the University, will represent the Medical Faculty on this special committee.

The Montreal General Hospital on the Late Dr. Buller.—At a meeting of the Medical Board of the Montreal General Hospital, held on November 20, the following resolution was unanimously passed: "Resolved that this board has heard with the deepest regret of the death of their late colleague, Dr. Buller, who was identified with the Montreal General Hospital for many years, first, for eighteen years, as ophthalmologist, and then for years as consulting surgeon. Dr. Buller's great abilities, originality and capability for work did much to advance the science of ophthalmology in Canada. His earnestness of purpose and great sincerity made him a most valuable member of the medical profession, whose interests he was always ready and willing to advance. His death is a great loss not only to the medical profession, but to the community at large."

News Items and Personal.—The largest class that ever presented itself to the British Columbia College of Physicians and Surgeons for examination was that of the present year. It numbered twenty-five, of whom eighteen were successful.

Dr. C. J. Fagan, Provincial Medical Health Officer for British Columbia, has arrived home at Victoria, after a visit to the old land and attendance on the Tuberculosis Conference at Paris. Dr. Fagan contracted inflammatory rheumatism on the passage over, and for some time was in New York and Montreal hospitals. The different municipalities of the Province of Manitoba are contributing amounts varying from $25 to $100 to the St. Boniface Hospital, Winnipeg.

The total number of patients treated in the General Hospital, Winnipeg, during the week ending November 11 was 370, of whom 237 were men, 95 women and 38 children.

Dr. F. Montizambert, Ottawa, Director-General of Public Health for Canada, will preside over the section on State Medicine at the coming meeting of the British Medical Association in Toronto.

The Address in Medicine at the British Medical Association at Toronto in August next will be delivered by Dr. James Barr; the Address in Surgery by Sir Victor Horsley.

Dr. Norquay, of Winnipeg, has been appointed assistant medical superintendent of the Provincial Asylum of Manitoba at Brandon.

Dr. W. J. Macdonald, who served with "C" Battery in South Africa, and a graduate of Toronto University, has located in practice at St. Catharines, Ont.

Some time ago a practitioner of British Columbia was erased from the medical register of that Province for unprofessional conduct. An appeal to a judge resulted in an order from the court to again place the name upon the register. Recently upon representations from the College of Physicians and Surgeons of British Columbia, three judges of the full court of that Province have decided to allow the appeal of the college.

Dr. P. H. Bryce, the chief medical officer for the Department of the Interior, Immigration Branch, reports that the medical officers at ports of entry have deported ove 700 immigrants during the past season for disease.

Dr. G. Forest Weatherhead, assistant physician of the Protestant Hospital for the Insane at Verdun, Quebec, has been presented with a medal by the Royal Canadian Humane Association for bravery in saving a young lady of Orange, N. J., from drowning while bathing in the St. Lawrence River.

Niagara Falls, Ont., will erect a new hospital at a cost of $17,000.

The new Alexandra Hospital, Montreal, for contagious and infectious diseases in the Protestant population of that city, will be ready for the reception of patients some time in January.

The Western Hospital, Toronto, will erect an addition at a cost of $10,000.

Quebec City will erect a provincial sanitarium for consumptives, the Quebec Government having donated a site of 500 acres for the purpose.

Acording to the reports of the Recorder's Court in Montreal, insanity is increasing in that city. The commitments in 1898 were 158; in 1900, 174; in 1904, 251.

GENERAL.

The Finsen Memorial.—The amount collected in Denmark for the erection of a memorial to the late Professor Niels Finsen is said to be 100,000 crowns. King Edward has subscribed £50 and Queen Alexandra £100 to the fund.

Tuberculosis Exhibit in Boston.—Faneuil Hall will be given over to the State health authorities for ten days beginning with December 28 next for a tuberculosis exhibit or demonstration. The object is to show the people how to prevent the spread of consumption. The commonwealth will pay the bills of the demonstration, which will be as unique as novel. What the disease is, how the germ grows and the disease progresses, what can be done to prevent it or to stay it, general instructions and addresses along these lines, with the necessary physical exhibits to make clearer the instructions, etc., will be the main part of the demonstration. From the various institutions and hospitals that treat especially tuberculosis in its various stages will come exhibits and data. Those behind the exhibition are anxious that the public should cooperate They believe it will mean much for the general health of the community, as well as for the health of individuals who perhaps do not know how to assist themselves, if the exhibition is largely attended.

The Health of the United States Army.—The annual report of the Surgeon General of the United States Army, recently issued, states that the health of the army has shown a steady improvement during the fiscal year which ended on June 30, 1905. During the year there were 406 deaths from all causes. This is at the rate of 6.75 in 1,000, which compares favorably with 8.64 for the previous year and 17.93 for the years 1898-1902. The percentage of men constantly non-effective also showed a material decrease. Pneumonia stands highest as a cause of death, the rate in a thousand being 0.65. Tuberculosis comes second with 0.37, and typhoid fever next with 0.33 per 1,000. During the year there were 206 cases of gunshot wounds, 44 of which proved fatal. Twenty-one men were killed in action, 45 were drowned, 27 committed suicide, and 10 lost their lives through homicide. Among the native troops in the Philippines, 56 soldiers were killed and 25 wounded. The unusual proportion of killed to wounded, there being fewer wounded than killed, is explained by the fact that 47 of the killed were victims of hand-to-hand fighting with

edged weapons. The Surgeon-General says that the result of operations on wounded men shows that the army has a corps of capable surgeons, only two deaths attributable to operations having occurred.

Boston Medical Library Meetings, in Conjunction with the Suffolk District Branch of the Massachusetts Medical Society.—The last meeting was held Wednesday, November 15, at the Library. Dr. Richard C. Cabot was in the chair. As is usual at these meetings, the hall was crowded. Dr. Walter B. Chase showed an intensely interesting series of moving pictures of gaits, spasms and convulsions, first a series of pictures showing epileptic attacks, about thirty in all; next, gaits of all kinds, tabes, spastic paraplegias, etc., choreiform athetoses, the spasms and tricks of feeble-minded children and others. Dr. Chase demonstrated clearly the value of these living pictures as a method of teaching; he has at present some 37,000 feet of films, and is all the time at work on new and valuable subjects.

Dr. Walter B. Cannon demonstrated, also with the moving pictures, the peristaltic action of stomach and intestines in dogs and rabbits, taken by means of the X-ray and bismuth. These pictures gave an entirely new idea of the old peristaltic wave theory.

Dr. Richard Cabot showed six lantern slides, colored photographs of pictures taken of the various stages of autopsy findings, with the organs in situ.

Next, Dr. Cabot and Dr. Towle gave a demonstration with the reflectoscope, a most ingenious device, by which by simply holding an illustration from a book, a small pathological specimen, etc., against a screen in the lantern the image is thrown on the screen, greatly enlarged, in exquisite detail and with perfect coloring. All these demonstrations were received with great enthusiasm, and the meeting was considered one of the best that had been held.

Addition to Newton Hospital.—Ellison Hall, the new building at the Newton Hospital, which is to be used as an addition to and in connection with the work of the present nurses' home, is now almost ready for occupation. The hall is the gift of Mr. and Mrs. Frank A. Day, of Newton, and is a beautiful modern brick structure erected at a cost of upward of $30,000. The new home was given in honor of the late Hon. William P. Ellison, ex-mayor of Newton, Mrs. Day's father. Mr. Ellison, who died about two years ago, was for thirteen years vice-president of the Newton Hospital Corporation, of which body he was a charter member. His life was full of service for Newton institutions and the people of the city, and the new hall will serve as a monument to the man and his work. Ellison Hall is the sixteenth in the present group of buildings and the erection of the new kitchen building, which is now under way, will give the hospital still another. The growth of the Newton Hospital has been far beyond the expectation of its founders. Twenty years ago the institution consisted of two buildings, the present administration building and Thayer ward. Through the many public contributions and by reason of the excellent management which the institution has always had, it has come to its present size and efficiency. The new kitchen building will be a marvel in the way of modern appliances and convenience. It is to be modelled after similar buildings in the hospitals of the large cities and will make possible a still more sanitary and convenient administration of the hospital even than that under the present most efficient arrangement. The past summer has seen many other improvements in the hospital. The administration building, which has done service since the hospital was founded, has been moved to make way for the new kitchen building and has been re-enlarged and remodelled. Wherever modern improvements of the latest designs were necessary they have been installed and the whole hospital has been inspected and wholesale improvements for the comfort of patients and employees have been made.

The South's Scylla and Charybdis.—According to the New York *Times* the Chattanooga *Times* remarks that the whole South is to be congratulated upon the result of the conference of the Governors of fourteen States upon the regulation of quarantine. As the conference was summoned under the auspices of this newspaper, it is gratifying to learn upon its authority that the result is so satisfying. At one time there seemed a prospect that antagonisms upon the question of State or Federal quarantine would produce a dead-lock or a disagreement upon political considerations. And besides this difficulty there was doubt how the hygienic and labor interests of the South could be reconciled. The difficulty was solved by the adoption of two sets of resolutions. One recommends Federal control of seacoast quarantine, with cooperation between the States and the United States regarding inter-State quarantine. The other resolutions expressly invite all desirable white immigrants to disregard representations that they are unwelcome and to come freely to help develop Southern resources. The quarantine resolutions adopted so authoritatively should go far to settle a disputed question in which the entire Nation is interested. The most ardent advocate of State's rights can hardly doubt that the Federal Government can regulate marine quarantine better than any single State, and efficient seacoast quarantine will go far to dispense with the necessity for any inter-State quarantine. If the United States had kept yellow fever out of New Orleans there would have been no occasion for the shotgun abuses. The susceptibilities of Gov. Vardaman and his followers yielded to the common-sense talk of Mr. Williams, who suggested that Federal money could be obtained, and local funds saved, only by yielding to the National Government control of a National function. The United States, he argued, with National resources should defend the United States against such a common calamity as an epidemic, and cities like New Orleans should not be burdened with a task not rightly theirs. Mr. Williams's influence as well as his arguments will be efficient when this topic recurs before Congress. The immigration resolutions are less local than they seem at first. If the South is to keep step with the Nation's progress it cannot deny itself facilities availed of in other sections. For example, nothing is more remarkable than the rivalry between Northern and Southern cotton mills, and there is no greater obstacle to Southern advancement than difficulty to get its staple picked and spun. New England mills are not worked by New England labor. French Canadians first filled the demand for labor, and other nationalities followed. In Lowell there is an entire section of the city filled by a Greek colony. The Italians have qualities fitting them for Southern climates, and if a few families are established, others will follow. Nothing was better in Mr. Williams' remarks than his impatient dismissal of the false pride which differentiates the South

from the rest of the Union. The same principles make for prosperity everywhere within the National limits, and he hoped that on the labor as well as upon the quarantine questions the South would profit by the experience of other sections and march with them. The result shows that this reasoning prevailed, and it is hardly to be doubted that the Chattanooga convention will benefit all the States represented.

CORRESPONDENCE.

GIBBS MEMORIAL PRIZE.

To the Editor of the MEDICAL NEWS:

DEAR SIR: In December, 1902, you published, at the request of the trustees of the New York Academy of Medicine, the following communication:

"THE EDWARD N. GIBBS MEMORIAL PRIZE.

"ONE THOUSAND DOLLARS.

"Subject.—The Etiology, Pathology and Treatment of the Diseases of the Kidney.

"The New York Academy of Medicine announces that the sum of One Thousand Dollars will be awarded to the author of the best essay in competition for the above-mentioned prize. The subject of the essay, as stated, shall be 'The Etiology, Pathology and Treatment of the Diseases of the Kidney.' Essays must be presented on or before October first, 1904. Each essay must be in English, typewritten, designated by a motto, or device, and accompanied by a sealed envelope, bearing the same motto, or device, which shall contain the name and address of the author. No envelope will be opened except that which accompanied the successful essay. The Academy reserves the right, according to the direction of the donors, not to award the prize if no essay shall be deemed worthy of it. The Academy will return the unsuccessful essays, if claimed by their respective authors, or by authorized agents, within six months. An essay must show originality in order to obtain the prize. The competition is open to the members of the regular medical profession of the United States. The original of the successful essay shall be the property of the Academy, and, according to the deed of gift, will be published in its Transactions. The essays shall be transmitted to The Committee of the Trustees of the New York Academy of Medicine on the Edward N. Gibbs Memorial Prize."

This publication was sent out as the result of a letter written to Robert F. Weir, M.D., President of the New York Academy of Medicine on March 25, 1901. It read as follows:

ROBERT F. WEIR, M.D.,
President, New York Academy of Medicine.

DEAR SIR: In memory of the late Edward N. Gibbs, we wish to present to The New York Academy of Medicine a fund of ten thousand dollars, to be permanently invested by the corporation and the income devoted under its distinguished auspices as follows:

There shall be awarded triennially to the physician of regular standing in the medical profession of the United States of America who shall present the best original essay upon the etiology, pathology and treatment of the diseases of the kidney, a prize to be known as the "Edward N. Gibbs Memorial Prize."

The amount of such prize shall equal the accumulated income of said fund for three years or for the period elapsed from the last award, the same being not less than three years, subject only to such deduction as may be necessary by the expense of the public advertisement or announcement of the terms of competition and publication of the successful essay in the published Transactions of the Academy.

The terms of competition and the award of the prize shall be subject solely to the determination of such a committee of its members as shall be selected by the corporation therefor. In the event that in any year of competition no essay shall be presented which, in the opinion of such committee, is of sufficient value or merit to justify the award of the prize, such committee may withhold the prize and may direct that such prize be again competed for in not less than one year thereafter, when the committee shall have the same power of awarding or of withholding.

Enclosed is a check for ten thousand dollars ($10,000), the amount of prize fund.

We hope by this means to stimulate and encourage inquiry into the causes, nature and treatment of these diseases, and feel sure that we may safely confide to the Academy all details of effecting this purpose.

We are, dear sir,

Very truly yours,
SARAH BARKER GIBBS,
GEORGE BARKER GIBBS.

Before the Prize Committee, Drs. A. A. Smith, chairman; E. G. Janeway, W. T. Bull and T. M. Prudden, there were two essays. The refusal of the committee to award the prize was received by the trustees of the Academy on December 28, 1904, and by the Academy in its next stated meeting.

They beg to announce to the profession that essays treating of the subjects for which the prize was founded will be received on or before January 1, 1907, by the Recording Secretary of the New York Academy of Medicine, at 17 West Forty-third Street.

A. JACOBI, M.D., Chairman. CHARLES L. DANA, M.D., President.

The Trustees.

A. M. JACOBUS, M. D., Secretary. JOHN H. HUDDLESTON, M.D., Recording Secretary.

The New York Academy of Medicine.

RECTAL DILATATION.

To the Editor of the MEDICAL NEWS:

DEAR SIR: I wish to call the attention of the busy practitioner to the very serious danger of the use of rectal dilators. The philosophy of rectal dilatation is, in my opinion, a mechanical pederasty, as the inhibition of the sphincter muscles of the anus would be destroyed. The patient would in a short time have no power to retain fecal matter.

I do not deny that a few rectal dilatations might prove beneficial in cases of tight sphincters, such as supervening upon the addiction of strychnine and other stimulants.

L. M. YOUNG, M.D.

771 South Hermitage Avenue, Chicago.
Oct. 21, 1905.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, held October 5, 1905.

The President, Charles L. Dana, M.D., in the Chair.

The scientific business of the evening began with a paper on parathyroids, especially in their relation to Parkinson's disease.

Anatomy and Physiology of Parathyroids.—Dr. Wm. M. Berkeley, who read the paper, said that these little glands, as their name indicates, are to be found lying alongside the thyroid in practically

all of the higher animals. Most of the vertebrates have now been examined for the purpose of determining this fact, and four, though sometimes five, parathyroid glands have been constantly found. As a rule, two occur on each side, lapping the thyroid gland. Like the adrenal glands, and the pituitary body, the parathyroids are composed of solid columns of cells, with a similar structure in all animals. Of their physiology not much is known, though it has been determined that one or more of them up to three may be removed from the cat without producing any manifestation of disease or of any change in the animal. If all of the glands are removed, however, salivation occurs, the breathing becomes very hurried, albuminuria develops, and great emaciation takes place. There is a distinct tremor present nearly all the time, and convulsions sometimes occur. It becomes very difficult for the animal to walk. Death usually takes place in about ten days. If the parathyroid material from another animal be administered to the parathyroid-ectomized animal, most of the symptoms are relieved for the time being, but the animal eventually dies.

Consequences of Removal of Parathyroids.—There has been a serious question as to whether the removal of the parathyroid glands produces a recognizable set of symptoms always of the same kind such as occurs in Addison's disease or in myxedema. A number of investigators have made suggestions in this matter. Gley and Edwards, working in Paris, thought that the degeneration of the parathyroids caused Graves' disease. Other observers have connected affections of them with infantile convulsions and with eclampsia. Dr. MacCallum suggested the possibility that epilepsy might be due to these little bodies. A number of observers have thought that tetany was connected with them. In some autopsies abundant mitoses were found in the cells of these glands in persons who died during a tetanic seizure. During pregnancy, if there are signs of tetany, some observers have found that the symptoms are relieved by the administration of parathyroids. The evidence, however, is too slender absolutely to support the conclusion until further observations are completed.

Paralysis Agitans and the Parathyroids.—Dr. Berkeley himself was very much struck with the fact in watching animals from whom the parathyroids had been removed, that their condition resembled that of patients suffering from paralysis agitans. The idea that possibly this affection might be due to a toxin in the system that should be neutralized by the parathyroids, but was not, naturally followed. A number of observers have suggested a toxic origin for paralysis agitans. In 1893, Dr. Chas. L. Dana suggested that there might be some toxic agent in the blood affecting special areas of the cerebrum and spinal cord. Six years later he added the further thought that the affection looked not unlike one in which there would be found some absence of an important glandular secretion. He tried the administration of thyroid, but patients grew worse, though they were better for a time under the administration of pituitary body, the relief did not continue. Möbius also suggested an endogenous toxemia.

Clinical Results.—The use of parathyroid material seemed justified in these cases therefore. Altogether eleven cases were under the observation of various conservative practitioners. The majority of them were relieved from some of their symptoms, and some of them in whom the treatment was carefully maintained for some time, the relief was so great as to constitute a complete intermission of the symptoms. One case has suffered very severely from tremor in the hand, so that he had been compelled to give up his occupation of tailor, and after taking a certain amount of parathyroid he could thread his needle and went back to his trade once more. In other cases almost as strikingly good results were obtained. In some, however, the relief was only at the beginning and then the symptoms returned.

Parathyroid Material.—The desiccated parathyroids degenerate rather easily and must be kept on ice. It must be employed in comparatively small doses, for large doses produce an exaggeration of the symptoms. Each specimen of the material that is used must be tested physiologically; otherwise it may be absolutely inert. Material obtained from Armour & Company has proved the most worthy of confidence in Dr. Berkeley's hands, and Mr. Bell, the head of the physiological department of Armour, has taken special care in the preparation of the material. The remote effect that may be produced by administration of dessicated parathyroids is as yet unknown, for no patient has taken the remedy for more than four months. There seems to be no doubt now that the parathyroids are not associated with Graves' disease, or with cretinism, since in both of these classes of cases well-developed parathyroids have been found. As to the possible connection of degenerate parathyroids with Parkinson's disease, the whole matter hangs on autopsy, and Dr. Berkeley has not been able as yet to obtain even one on a subject that had died during an active stage of paralysis agitans. He suggests the hypothesis, however, and hopes that others who may have the opportunity of investigating the matter, may carefully investigate the state of the parathyroids in such autopsies as they have.

Dr. Hunt, who opened the discussion, said that in the case in which he had seen parathyroids used for Parkinson's disease, the patient had not been long enough under observation to draw any definite conclusion.

Variability of Parathyroids.—Dr. Fergusson said that the parathyroids were too extremely variable in location, number and appearance, for any conclusion to be made about them, except after very careful investigation. In connection with Dr. Rodgers, Dr. Fergusson has examined over two hundred portions of tissue, thought at the time of autopsy to contain parathyroid material. Of these one hundred and eighty-nine tissue specimens came from adults, four or five being removed from each subject. Sixty-one of these pieces of tissue contained one or two parathyroids, that is, about one in three. There were eighty-two pieces of thyroid, most of these in little lobulated masses, the so-called accessory thyroids. Thirty-six were lymphatic glands, a few were hemolymph glands. Ten were remnants of the thymus. Some contained only fat or nodules of connective tissue; one was a mucous gland, and many of the specimens contained only the merest speck of parathyroid material, impossible to recognize, except with the microscope.

Infantile Parathyroids.—Twenty-eight tissue specimens for examination were obtained from in-

fants. Eleven of these contained parathyroid material, or about one in three as before. Nine were accessory thyroids; three were lymphatic glands; six were thymus remnants. In the infant the parathyroid cannot be said to be smaller in size than in the adult, because there is an extreme variability in this organ. Usually parathyroids are said to be from three to five millimeters in diameter. The fact is that the maximum size is about five millimeters, but they run down to fifteen micromillimeters, a size at which, of course, they could not possibly be directed by the naked eye. In human beings they are never so regularly situated as Cohn has described them in the cat. Only once in all the human beings examined were the thyroids found in the supposed normal locations. Their shape is also extremely variable, and they may be ovoid or may only be a very minute, somewhat rounded, body, lying along the vessels going to the thyroid. Certainly it would be a daring surgeon who would attempt to cut down in the cervical region with the idea of removing all of the parathyroid tissue, and it only.

Pathology of Parathyroid.—Very little work has been done in describing the pathological conditions which occur in the parathyroids. The main form of degeneration seems to be an overgrowth of connective tissue. Curiously enough there is normally more connective tissue in the young than in the old. The parenchyma of the glands is much more extensive in old persons, and the gland is evidently not meant for youthful metabolism. Congestion of the glands is quite frequent. Pigmentation is noted at times, and there are marked changes in the appearances of the cells of the parenchyma, such as would remind one of the changes that occur during the function of a gland.

Parathyroid Etiology.—There has been much conjecture, Dr. Rodgers said, with regard to the possible connection of parathyroid degeneration and various diseases. Dr. Rodgers at one time believed that the deaths, which occurred in Graves' disease after operation for the removal of the thyroid gland, might be due to the removal of the parathyroids at the same time. An examination of specimens showed, however, that the parathyroids had not been removed with the thyroids. The extreme variability in size and position of the parathyroids is as noteworthy in horses as it is in men. Dr. Rodgers has had opportunity to dissect the cervical region of a number of dead horses that had been collected by one of the city departments, and he found that even in these animals no dependence could be placed on microscopic appearances, and only the microscope enabled the observer to decide whether there had been any changes in the glands. In Dr. Rodgers' opinion the parathyroids have much to do with convulsions. Just what the connection is, however, is not sure. A pup from whom the parathyroids have been removed died in convulsions. An adult dog may or may not die. The glands are much more closely connected with the thyroid and the thymus than is usually thought.

Clinical Experience.—Dr. James J. Walsh said that as the result of the hypothesis, that possibly the parathyroid glands were connected with Graves' disease, he had used desiccated parathyroids in four well-marked cases of this affection. The dosage was at first one-half grain three times a day, and later one grain three times a day. Both the milder cases were apparently improved by the remedy. Of course, they were frankly told that they were taking a new remedy, and also something of its possible character in relation to their disease. The well-known tendency for Graves' disease to have in mild form distinct remissions, might well account for the improvement in these cases. Two severer cases, treated at first with small quantities without any result, received larger doses up to four grains per day, and then had a definite deterioration of symptoms.

Glands of the Neck and Etiology and Therapeutics.—Dr. Walsh said that the use of various extracts and desiccations of the glands in the neck formed an interesting bit of history during the last ten years. When an English surgeon announced that some of his patients suffering from Graves' disease, were improved by the administration of thyroid substance, a number of persons throughout the world tried this material. The usual result was, of course, that the patients grew worse. Then the England surgeon looked more carefully to the source of the material, which he had been using, and announced that it was thymus and not thyroid that the butcher had been furnishing him with. For a while then all the world used thymus without any results to speak of. It reminds one a little of the use of what was supposed to be prostate gland for prostatism. Many patients were relieved in Berlin, but it was found that the butcher had been supplying seminal vesicles instead of prostatic material. Many of the so-called major neuroses, from epilepsy through Graves' disease to various less serious nervous affections, have been attributed to affections of the parathyroids. It has now come the turn for Parkinson's disease, but as is evident, from the reports with regard to location and size of parathyroids in normal individuals, great care will have to be taken in the investigation, before any conclusions can be arrived at. Microscopical examinations will not be enough. In Virchow's laboratory, some seven years ago, the removal of a number of specimens, with the idea of determining whether parathyroids were present or not, showed that only in about one out of four of the specimens had the parathyroid been obtained when looked for with the naked eye.

The last word in the discussion was said by Dr. Dana, who said that some of his patients seemed to be improved at first by the use of parathyroid material, though later as good results were not obtained. The conclusion is unsatisfactory, but it is not sure that the real gland was employed in some of the cases.

Dangers of the X-ray.—Dr. Arthur Holding, of Albany, N. Y., discussed the dangers of the X-ray to the physician employing them. The burns produced by the X-ray tubes are distinguished for their initial latency, their difficulty of cure, the arteritis which is behind them, and the soft scars with telangiectasis which so often follows them. This shows that they are due to a form of gangrene. Physicians have suffered very severely in the last few years. Three have died as a consequence of injudicious exposure to the rays. In some of these, amputations of the hands and arms have been made, even beyond the shoulders. In one case nine separate epitheliomata had developed on the fingers. In thirty cases, of which Dr. Holding has knowledge, there were operations for lesions of the hands. Eczema and the most chronic skin lesions with serious pathological condition of the eyes, are extremely common. Most of these, however, improve

at once when the use of the X-rays is given up for a time.

Precautions Necessary.—The fluoroscope should not be employed as a means of observation, since it is dangerous for the eyes, and lead glass should be employed to protect them. A lead suit of armor would be too heavy, a lead apron is not enough protection. A lead protector for the tube does not allow the rays to be seen to determine the amount of their fluorescence. An apron made of rubber tissue, in which a good deal of bismuth has been impregnated, protects all the important parts of the body and is perhaps the best protection. Radium, which has become prominent because of its connection with the X-ray, is not superior as a therapeutic agent, but its freedom from connecting wires allows of its use in the stomach, esophagus and bladder. Dr. Holding presented some specimens of epitheliomata which had developed in X-ray burns, and also of the azoospermia with spermatin crystals which develops as a result of carelessness in the use of X-rays on the part of operators who handle the X-rays much.

Necessity for X-rays.—Dr. Hermann Grad said that the operator must not expose himself, though this phase of the question was not thought of when the X-rays were first introduced. Enough has been learned now, however, to protect the patient from X-ray burns, especially when they are used only once for diagnostic purposes. The courts have recently come to acknowledge the value of radiograms. A woman hurt on the street cars was thought at first, on account of the swelling present, not to have a dislocation; later a dislocation was found by means of a radiogram. The railway company then claimed that the permanency of the injury was due not to the original hurt, but to the neglect properly to care for it.

Dr. Cole said that no form of perfect protection yet invented is sufficient for the operator. He considers that the only absolutely safe procedure is to have the tube and the patient in one room and the operator in the next room, observing and directing operations, through a peephole of lead glass. The only test of being protected is for the X-ray operator to carry a photographic film in his pocket, and if this is spoiled, his precautions are not sufficient. Dr. Cole lost the finger nails of one hand, using the X-rays, and then the finger nails of the other hand; he then applied the tube by means of his arm, and lost all the hair from that. He has been away from the use of the X-rays for three months from that, however, out in the sunlight most of the time, and though it may sound like a patent medicine advertisement, he now has a double crop of hair on the parts previously affected.

X-rays Overused.—Dr. Piffard said that most of the cases reported cured by the X-rays could have been treated just as effectively, and probably quicker and cheaper, by other means than the X-rays. Personally, he has found that gloves coated with white paint are the best protective for the hands. He has endeavored to obtain tubes made of a kind of lead glass, except for a window in them of other glass, which might prevent the diffusion of the rays and protect the operator from the caustic rays and the sterilizing rays.

Dr. Cleaves said that always after using the X-rays the patient should be exposed to strong light. This seems to prevent subsequent complications, with which she has never been bothered.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held October 4, 1905.

The President, Chas. S. Bacon, M.D., in the Chair.

Tumor of the Brain.—Dr. Max Reichmann reported a case of tumor of the brain, diagnosed by skiagraph and Roentgenogram. He exhibited the patient, and showed pictures of the case.

Dr. Sanger Brown said that he had never seen a skiagram in which the convolutions were so plainly shown. His experience, however, was that skiagraphs were misleading in tumors of the brain. While he thought it was warrantable to have skiagraphs made in these cases, he did not think confidence should be placed on the results, because he had had several operations made where it was thought by the operator, an experienced surgeon, that there was a tumor of the brain, and they had been disappointed after operation. The case exhibited was interesting in consequence of the long duration of the specific growth. It was a point to be remembered with a good deal of profit, if it had been satisfactorily demonstrated to be a specific growth, that such a growth could occur in the brain and be present for five years without any sign of a specific condition manifesting itself in the child. It undoubtedly should be classed as a congenital syphilitic growth. He thinks that practically all cerebral tumors show a wonderful abatement of symptoms upon the exhibition of full doses of the iodides.

Dr. Charles P. Donelson was much interested in the case and in the skiagraph. He referred to the difficulty of localizing disease or tumors of the brain, and said that it had for many years been a stumbling-block to physicians everywhere. He believed that the X-ray had opened a new era in distinguishing many diseases of the brain. His experience, although limited, has been that some cases of brain tumors had been relieved by operative measures, and related a case in point.

Dr. Julius Grinker spoke in reference to the X-ray in diagnosing brain tumor. He believed Dr. Reichmann overvalued the X-ray in diagnosing these growths. He thought that a tumor of dense consistency could be easily detected by the X-ray, yet the same tumor could be diagnosed without the X-ray. In tumors situated in regions where the focal symptoms were indefinite—where brain tumor was suspected—the profession is disappointed in the findings of the X-ray. He took issue with the author, and said that in spite of the X-ray one should make a careful study of every case.

Dr. L. Harrison Mettler agreed with Dr. Grinker. His experience in the use of skiagrams in attempting to diagnose intracranial neoplasms, though limited, has been disappointing. He said that too much reliance should not be placed on the X-ray in these cases, but more upon those well-known, established clinical findings of intracranial growths of all kinds. Skiagrams are simply confirmatory in these cases, and have not reached a point of perfection in an absolutely confirmatory sense. The X-ray was, after all, only an aid.

Dr. Reichmann, in closing the discussion, said that it was possible to skiagraph the convolutions of the brain and bring them out very clearly, and that in the case he reported there was positive evidence of the presence of a tumor of the brain.

Incipient Acromegaly.—Dr. Harold N. Moyer presented a woman, twenty-three years of age, in whom he had made this diagnosis. The patient first consulted him for progressive failure of vision. The history of the case was not significant. Seven years ago she became amenorrheic. Three weeks ago she began to have headache on the right side of the head, which

pains were neuralgic in character and radiated into the temple, and had progressed with increasing severity. That was the subjective history. Other than that she had been well, so far as she knew. There was a tendency to somnolence in this case. Bitemporal hemianopsia was present. He believed that these symptoms pointed unquestionably to beginning acromegaly. Patient thought her face was enlarged; also her fingers. Dr. Moyer suggested the removal of the pituitary gland, if such were possible, and thought there ought to be some advance in surgery of late years along this line. It seemed to him that surgery would offer the only chance. He referred to a case reported in the literature where an operation had been attempted in a similar case, but did not know how well the surgeon had succeeded. This was the earliest case of acromegaly that he had ever seen.

Dr. Henry Gradle, in discussing Dr. Moyer's case, said that hemianopsia might be divided into those cases which were clearly due to acromegaly and those which were not. There were, of course, also cases on the borderline, perhaps like Dr. Moyer's patient. There was a large proportion, for instance, of cases of hemianopsia positively not due to acromegaly. There were cases that had been observed for years, and personally he had made some observations of that kind. He referred to a case, the report of which was published by Weir Mitchell, where the chiasm so pressed on an anomalous artery that hemianopsia was produced. A point of interest to him in these cases was the expansion of the front of the face, such as is seen occasionally after extensive fibroma at the root of the pharynx.

Dr. Hugh T. Patrick said that every tumor of the pituitary body did not mean acromegaly, by any means. Some of these tumors were benign, and he had had at least one case in which total amblyopia supervened, but otherwise the individual was perfectly well and strong, and of course that would bear upon the question of surgical intervention. He thought the removal of the enlarged pituitary body would be quite an undertaking, even for the most experienced surgeon.

Dr. Julius Grinker referred to the article of Dr. W. W. Gray, describing cases of incipient acromegaly. He referred to Gray's conclusions regarding the separation of the teeth as a diagnostic point of value. That is, he believes that if a person has large or abnormal spaces between the teeth of the lower jaw, and it can be ascertained that previously the teeth were close together, and now began to separate, it is a sure sign of beginning acromegaly.

Dr. Moyer, in closing, said that a German had referred to separation of the teeth before Gray took it up. In his case the teeth were close together in both jaws. If he were not confident that the case was one of incipient acromegaly, he would not have presented the patient.

Tabes in a Negress.—Dr. Hugh T. Patrick showed a colored woman, forty-one years of age, who had all the typical symptoms of tabes. There were three points of interest in the case. The first was a perfectly typical, complete, ordinary case of tabes in a colored patient, which is quite rare. This, he thought, was the sixth case he had seen, and of those it was the only typical one. She had the Argyll-Robertson pupil. She had loss of the deep reflexes; analgesia of the legs; trunk analgesia; imperfect bladder function, so far as holding the contents of this organ was concerned; typical ataxia, with a perfectly typical gait. Why tabes was so rare in the colored race, yet the most frequent cause of tabes was so frequent in them, had not yet been ascertained. Another point of interest in the case was the fact that her symptoms had progressed very rapidly in the last few months, when there had been an aggravation of all the symptoms. Patient had lost considerably in weight. This, he said, was a sign of grave significance. With regard to treatment, Dr. Patrick advised the rest cure, with nutritious food.

Palsy.—Dr. Patrick also showed a patient with palsy. This patient either slept on his arm, or lay with it in such a position that the edge of the bed pressed on the nerve. He had wrist-drop of the right hand. It was a paralysis of the musculospiral nerve, rather complete as to degree, but not entirely so.

Stated Meeting, held October 11, 1905.

The President, Chas. S. Bacon, M.D., in the Chair.

Brain Tumor.—Dr. Julius Grinker reported a case of brain tumor, with the following history: M. M., a laborer, age twenty-eight years, entered Cook County Hospital March 14, 1905. The family and personal history were negative, and syphilis was denied. His habits were always good, and he never sustained an injury. Three weeks previous to admission he began to complain of severe headaches, which were constant and generalized. At about the same time spells of vomiting appeared, which seemed to have no relation to the gastric functions. A feeling of nausea always accompanied these vomiting spells, but sometimes there was nausea without vomiting. Somewhat later in the course of the disease attacks of vertigo came on whenever the patient attempted to stand or walk. Then progressive generalized weakness of the entire muscular apparatus became a marked feature. The beforementioned symptoms soon inhibited any kind of work and compelled the patient to lie in bed most of the time. An examination showed a man of medium height and weight, with well-developed muscles, who staggered in attempts at walking. His face appeared slightly asymmetrical, though no paralysis or paresis could be detected when the muscles were at rest. The skin was somewhat muddy; there were no eruptions, but a few insignificant scars from a burn could be seen on his back. Glandular enlargements could not be detected. Viscera were normal. The pulse was rather slow and full, with fairly high tension. The secretions and excretions yielded negative results, with the exception of the stomach contents, which were somewhat deficient in free hydrochloric acid. A slight difference in the innervation of the two halves of the face in favor of the left half was evident when the patient attempted to uncover his teeth, blow up his cheeks or move his jaw from side to side, but there was no difference on the two sides in transverse and longitudinal wrinkling of the brow and in the function of the orbicularis palpebrarum muscle. The tongue was somewhat tremulous and when protruded deviated slightly to the right. Although there was no paralysis or paresis of any muscles, the grip was rather weak, in both hands, but slightly better on the left side. Strength was not appreciably diminished in the lower extremities except that the right limb was not as strong as the left. Coordination was normal in upper and lower extremities, but the patient at times presented a peculiar staggering gait. The superficial reflexes were normal on both sides. The upper reflexes were somewhat brisk, slightly more so on the right side. The left knee-jerk was about normal, the right is slightly in excess. Ankle clonus was barely indicated on the right and doubtful on the left side. There was no Babinski, Oppenheim or Gordon reflex. Sensation was unimpaired in all its qualities. The eyes showed

nothing abnormal at the first examination. The patient is mostly depressed and worried greatly over his disease and about his family. He never indulged in flippant talk, the so-called "Witzelsucht" of German writers. His speech was rather slow and labored, and was quite unintelligible, partly because of his ignorance of English. March 22, 1905, it was noted that the left palpebral fissure was wider than the right, and that the left pupil was somewhat dilated and reacted sluggishly to light.

On April 15, 1905, Dr. Grinker could easily make out a double optic neuritis, which was verified by Dr. B. Pusey.

The patient frequently groaned in pain and would place his hands over the frontal region as if to indicate the exact location of his pain. Slight physical or mental strain, such as walking or being interrogated about his symptoms, always aggravated the headache. No bruit could be heard over any portion of the cranium, and percussion failed to elicit the cracked-pot resonance occasionally noted in brain tumor. Somewhat toward the end the right-sided weakness became more pronounced, without, however, developing into distinct loss of power. There never were Jacksonian or other convulsions. The patient eventually became more apathetic and was even stuporous at times, but he could always be sufficiently aroused to answer questions.

A skiagraphic picture showed nothing of value, from a diagnostic point of view.

Résumé.—Dr. Grinker gave the following résumé: The headache, vomiting, vertigo, general weakness, optic neuritis, and gradually deepening mental apathy, with staggering gait, and the slowly developing weakness of the right half of the body, led to a diagnosis of brain tumor. Of localizing value was the difference in the muscular strength on the two sides of the body, possibly the more pronounced papillitis on the left side, and the mental apathy and tendency to somnolency. In the absence of symptoms pointing to cortical irritation, such as Jacksonian fits or muscular twitchings of any kind, he considered the neoplasm to be most probably subcortical in location, and the right-sided weakness in the arms and face led him to locate this tumor on the left side of the brain in the region of the anterior central convolution bordering the Rolandic fissure, and probably extending from about the junction of the upper with the middle third down near to the base, but not involving the base of the brain.

The diagnosis was verified by operation, and post-mortem findings, for the patient was found to have a large infiltrating glioma in the frontal lobe, involving the ascending frontal convolution. In conclusion, Dr. Grinker criticized the old schemes of cerebral localization, and said he accepted the main findings which place most of the motor area in the ascending frontal convolution anterior to the Rolandic fissure, instead of in the postcentral convolution.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, held October 11, 1905.

The President, James M. Anders, M.D., in the Chair.

SYMPOSIUM ON DIABETES.

Physiology of Glycolysis.—Dr. David L. Edsall presented this paper, reviewing the literature concerning the chemical changes that sugar is known or suspected to go through in the body in the course of its assimilation. He also referred to the various theories and experiments in regard to the existence of a demonstrable glycolytic ferment and the conditions that affect its action. The most important fact known concerning glycolysis he said was the influence exerted upon the formation or destruction of acids. He stated further, that something that occurred in the course of the metabolism of sugar prevented the escape of large amounts of acids, while when carbohydrates were withdrawn from the diet, in diabetes or in health, and indeed in any fever or disease, large amounts of acid entered the circulation and produced more or less severe intoxication.

Varieties of Glycosuria.—Dr. L. Napoleon Boston discussed at some length the varieties of glycosuria, classifying this symptom according to its various different etiologic entity and also as to the severity of this condition. Under alimentary glycosuria mention was made of twelve cases under personal observation where the percentage of sugar passed was rather high, but in none of these was more than fifty ounces of urine voided uring the 24 hours. Some of these patients displayed glycosuria, periodically occurring every one to twelve months. During the past two years there had been studied at the Medico-Chirurgical Laboratory eight glycosuric urines collected from children under two years of age. Traumatic and puerperal glycosuria were considered, and two illustrative cases of the latter were cited. Special mention was made regarding the likelihood of the urine to contain milk sugar during the puerperium.

Relations Between Diabetes Insipidus and Diabetes Mellitus.—Dr. A. G. Ellis said that the resemblances and differences might be considered under two headings, clinical or symptomatic, and pathologic. Clinically they resembled each other in the thirst and polyuria. The urines from the two, he said, were also similar, with the great exception of glucose in that of the saccharine type. Also, they were similar in some of the causes, as heredity, injuries to the nervous system and diseases of the nervous system, as meningitis and brain tumors. The pathology of the two conditions, he said, was so obscure as to render comparison very difficult and unproductive of definite conclusions. Whatever the cause, and however brought about, the perverting carbohydrate or proteid metabolism, with the resulting glycosuria, of diabetes mellitus, was the distinctive feature of that disease and separated it sharply from the insipid type. This was considered as probably the only essential difference between the two, but sufficed clearly to differentiate them. One form might change into the other, and several cases were cited. This, however, did not, in his opinion, necessarily signify an actual interrelation between them. One reported case developed, during diabetes insipidus, coma which closely resembled that often seen in the saccharine type. This, the author thought, seemed to show the possible production of similar products, although it might have been a transition case.

Management of Cases of Diabetes Mellitus.—Dr. James Tyson, in this paper, stated his belief that the results of the treatment of diabetes mellitus were, on the whole, more satisfactory in the last decade than prior to this period. This was ascribed to more accurate and systematic practice in the urinalysis for sugar and to a better judgment in the administration of food. In treatment Dr. Tyson said the first consideration was to determine the patient's capacity for the assimilation of sugar and

starch, and the most satisfactory method for this is to give a definite weighed quantity of proteid and carbohydrate food, and study the urine during its use. This precision, however, he said, was not always necessary, and that it was sufficient to have the patient take for breakfast a cup of coffee with cream but without sugar, a couple of eggs and a small piece of bread with butter; for dinner, soup without vegetables, meat and green vegetables; for supper, a cup of tea without sugar and, if desired, oyster or clam broth without milk or flour. The diet should be maintained for three days and the urine then analyzed for sugar. Absence of sugar showed the ability of the patient to assimilate as much carbohydrate contained in the food allowed. The quantity of the same kind of food, therefore, could be increased until the patient was satisfied. If, on the other hand, sugar were found in the urine, the bread should be reduced or substituted by gluten breads more or less pure. Dr. Tyson said he had seen astonishing results follow this simple method. He believed that the fear of a too exclusive diet producing diacetic and oxybutyric acids, the supposed cause of diabetic coma, was exaggerated. He placed much importance upon the value of proper hygiene in the treatment. In the medicinal treatment he referred to opium as the only drug capable of reducing the quantity of glucose. He advocated the use of small doses of Fowler's solution and of such tonics as iron, strychnine and the simple bitters. The alkalies were mentioned as useful, especially as a protection against the acid intoxications. The benefit derived at mineral springs, he thought, was chiefly the result of the relaxation, the freedom from care, the regular diet and the improvement of the hygiene of the individual, although he acknowledged the valuable effects of the waters.

Dr. Frederick P. Henry, in the discussion, said that diabetes mellitus must be considered as a condition of malnutrition, since it was impossible to classify it as dependent upon specific infection or associated with definite anatomical lesions. The chief exciting cause, he said, was generally agreed to be the use of farinaceous and saccharine food to the exhaustion of the power of its assimilation. In this connection reference was made to the statement that in Genoa, where the diet of the people consists largely of meat, it was difficult to get a case of diabetes for diagnostic purposes, while the directly opposite condition prevailed in Naples where farinaceous foods are principal articles of diet. He thought the theory of Ebstein formed a feasible working hypothesis. In the cases in which it was impossible to get rid of the sugar he considered treatment of little avail. Of more importance than the quantitative tests for sugar he considered a test for acetone. One test for acetone mentioned was that of smell, but when this was available the patient's condition was very far advanced. In regard to treatment, Dr. Henry believed that in the presence of more than the normal amount of acetones care should be taken about exercise. In diet he thought that the large amount of butter, considered to be of value, was better given in the form of cream. He places much reliance upon the use of opium and the alkalies. He also stated his belief in the value of tobacco for the diabetic.

Dr. H. A. Hare, referring to the relative frequency of the disease in the two sexes, remarked that nearly 83½ per cent occurred in males. He referred also to the extraordinary increase in the frequency of diabetes mellitus. The geatest increase, according to one authority, was between the years of 1860 and 1870, the decade of the Civil War and its consequences. This increase was attributed by the investigator, not so much to the strain and nervous stress incident to that period, as to the fact that toward the end of the decade the people of the United States were eating and drinking more heartily of foods and champagne and other wines carrying a certain amount of sugar. If, as suggested, potatoes form a good diet for diabetics, Dr. Hare thought that the amount of butter recommended might with advantage be taken with the potatoes.

In the light of the knowledge of the present day Dr. Hare thought that the regulation of the diet in diabetes should be approached with the utmost caution. So little, he said, was known about metabolism that the physician who attempted to place a patient upon a strict diet and very different from that to which he was accustomed, acted upon a parallel with the man dropping a pebble into a fine piece of machinery. He thought it important to remember that carbohydrates should be administered the moment that acetonuria indicated the danger of coma. He referred to Dr. Edsall's statement that levulose could be utilized in diabetes better than sugar. Reference was made to the digestive disturbances and the serous diarrheas sometimes accompanying diabetes, and cited the case of a man who had died of diabetic gangrene. He did not agree with Dr. Henry in the value of the alkalies, unless the case was manifestly gouty, but has the greatest confidence in the use of codeine, morphine and opium. He thought that there was not a clear conception of the actual cause of diabetic coma; also, that it was an insufficiently recognized fact that diabetes was a symptom and not a disease entity. He remarked upon the frequency of the occurrence of diabetes in overeating, loafing, inert club men, and to the frequency of diabetes in Israelites. This was a different type, however, from that following prolonged mental strain or profound shock. A man with sugar in his urine, Dr. Hare did not think, was necessarily a diabetic. Glycosuria he believed to be curable and diabetes mellitus absolutely incurable, although it might be modified by treatment.

Dr. Judson Daland thought that in the dietetic treatment of diabetes a broader view should be taken looking to the restoration of the digestive power. He agreed that acetonuria was indicative of oncoming coma, but believed further that it was suggestive of marked depression of metabolic processes within the body. He thought all were of the opinion that the disease was more common among the well-to-do, and his own experience bore out the statements in regard to the increase in frequency of diabetes. With Dr. Tyson, he believed that the management of the affection had undergone a revolution, and that to-day greater success was obtained in treatment.

Dr. J. Allison Scott thought that in the glycosuria of pregnancy the sugar was shown by examination to be levulose and not glucose. True glycosuria, however, he believed, might exist in pregnancy, and he gave two illustrative cases. One was that of a woman who, two weeks after confinement, presented sugar in the urine. This disappeared, and she was in good health for eight years, but within the last few months she had developed all the symptoms of an active and severe diabetes. The second case was one in which the sugar preceded the confinement

for several months, disappearing after the birth of the child. The woman continued in good health for five years, but a child born at the beginning of the trouble has recently shown evidence of the development of the disease. He was inclined to believe that cases of gout more frequently than other varieties of disease presented sugar, and in cases of this type, in which the joints showed evidence of gouty deposits, he has seen improvement follow the acute serous diarrheas, although the sugar would slowly reappear upon the return to ordinary diet. Such cases he thought did better upon a rather full diet than a restricted one. In a considerable number of diabetic cases Dr. Scott believed that reliance upon symptoms for diagnosis would sometimes lead astray, for while with appropriate treatment the thirst, polyuria and hunger disappeared, large quantities of sugar might be present in the urine.

Dr. John M. Swan said that the presence of boils upon any part of the patient's body should lead to an examination for sugar. Referring to the acknowledged requirement of carbohydrates in every case of alimentary, or true diabetes, he cited an instance in which bread made from black rye flour was used, instead of bread made from wheat flour. Although this bread contained 73 per cent. of starch, there was not shown any increase in the amount of sugar contained in the urine. This was accounted for by the fact that from 10 to 12 per cent. of the starch was converted into dextrose.

Dr. Edsall, in closing, said that he had had under observation a number of cases of glycosuria of pregnancy, and that in most instances he had found much milk sugar, a point which modified the prognosis and treatment. He believed it not infrequent to see a case of glycosuria ultimately become one of true diabetes. Emphasis, he thought, should be placed upon the importance of not at once dismissing a case of glycosuria as simple in its significance. The diabetic coma, he though, was without doubt due to the acid intoxication, and to recognize its appearance the urine reaction should be carefully watched and quantitative estimations made of the ammonia. If this were present in amounts above 2 grams for the twenty-four hours the patient should be considered in danger of coma, and treatment should be instituted by modification of diet and the use of alkalies.

Dr. Tyson, in closing, referred to the importance of testing for acetonuria as equal to that for sugar, and added emphasis to Dr. Edsall's statement that alimentary glycosuria might, if left alone, pass over into true diabetes. For that reason it was well to consider them cases of diabetes and give them the same careful attention.

BOOK REVIEWS.

THE SURGICAL ASSISTANT. A Manual for Students, Practitioners, Hospital Internes and Nurses. By WALTER M. BRICKNER, B.S., M.D., Assistant Surgeon Mt. Sinai Hospital, Outdoor Department, etc. With 123 illustrations. The International Journal of Surgery Company, New York.

THIS manual of 360 pages, as the author well says in his preface, is essentially technical and aims to be thoroughly practical. It makes no claim for special originality, but endeavors to present a most important subject, that of the relation of the assistant to the operator, in a clear, concise and hitherto unpublished form. While there is a certain amount of material, as must necessarily be the case in any volume attempting to synthesize so diffuse and diverse topics and technics, which is determined largely by distinguished operators with whom the author has been associated, still there is a great deal of fundamental information correlated in a form which is stable and which should be used the world over practically as given. To students and to assistants other than those in the immediate field of the author's well-known work, these last will naturally prove of much greater value than the admittedly useful and ingenious "wrinkles" and useful hints, many of which are presented in Chapters VII, VIII and IX. Chapter X, containing an excellent differential diagnosis of shock and concealed hemorrhage, is particularly practical and should be familiar to every house surgeon. Two appendices have been added to this excellent manual. The first deals with the preliminary preparation and routine after-treatment of operative cases. It also presents in a most welcome manner the formulary for the preparation of many surgical materials. The second appendix shows illustrations of a few of the more commonly used surgical instruments. The volume is well made and copiously illustrated, and may conservatively be endorsed as a useful one to all surgeons, and in particular to assistants and to those engaged in teaching the subject of surgical technic.

THE MICROTOMISTS' VADE-MECUM.—A Handbook of the Methods of Microscopic Anatomy. By ARTHUR BOLLES SEE. Sixth edition. P. Blakiston's Son & Co., Philadelphia.

IT is without a moment's hesitation that this book may be pronounced as the most valuable on the subject in the English language—in fact, in any language. No worker with the microscope can afford to be without it. Most laboratory manuals dwindle into comparative insignificance in comparison with it. All of the newer methods are to be found in this last edition. It has been the reviewer's experience to find this book at the right hand of almost every worker in the zoological laboratories, but rarely even in the libraries of the student of human histology. It is too good a book to be overlooked by the medical student, as they obtain from it not the isolated facts of technic, but a philosophic mosaic of microchemical lore.

BOOKS RECEIVED.

DISEASES OF THE EYE. By Dr. C. H. May. Fourth edition. 12mo, 391 pages. Illustrated. Wm. Wood & Co., New York.

ELEMENTS OF HOMEOPATHY. By Drs. F. A. Boericke and E. P. Anshütz. 12mo, 196 pages. Boericke & Tafel, Philadelphia.

SYSTEM OF PHYSIOLOGIC THERAPEUTICS. By Dr. S. S. Cohen. Volume XI. 8vo, 388 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

HIGH POTENTIAL AND HIGH FREQUENCY CURRENTS. By Dr. W. B. Snow. 8vo, 196 pages. Illustrated. Scientific Authors' Publishing Co., New York.

DIAGNOSTICS OF INTERNAL MEDICINE. By Dr. G. R. Butler. Second edition. 8vo, 1168 pages. Illustrated. D. Appleton & Company, New York and London.

INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, U. S. ARMY. Second series. Volume X. Government Printing Office, Washington.

PATHOLOGY AND MORBID ANATOMY. By Dr. T. Henry Green. Tenth American edition. Revised by W. Cecil Bosanquet, M.D. 8vo, 610 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York.